THE PROBLEM OF ALIEN IMMIGRATION INTO GREAT BRITAIN, ILLUSTRATED BY AN EXAMINATION OF RUSSIAN AND POLISH JEWISH CHILDREN.

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PART I.

CONTENTS.

(i) *Introductory.* The purport of this memoir is to discuss whether it is desirable in an already crowded country like Great Britain to permit indiscriminate immigration, or, if the conclusion be that it is not, on what grounds discrimination should be based. If there is to be discrimination it may be based on purely quantitative considerations—such as largely rule at present admission of immigrants into the United States, where percentages of each racial element only are admitted per month; or it may be based solely on qualitative considerations—all immigrants up to a certain level of mentality, physique or health may be admitted. Here again the question of standard for admission is a very important one. It may be fixed so high that practically few are admitted, but the few may be those who are so much above the average intelligence of a nation, that they are a national gain. Or a community may admit individuals of special craft capacity, as, for example, the Huguenot silk-weavers, German clockmakers, Italian tunnel-workers, or Dutch engravers. We cannot disregard the advantages which in the past such immigrants have brought not only to our handicrafts, but to our arts. The argument for the admission of such immigrants has, we fear, been misused in the past in order to obtain a supply of cheap labour, because the foreign immigrants have not been subjected to any rigid entrance tests.

In the present state of psychological and medical knowledge it should not be hard to establish a standard of admission, which would insure that only immigrants of good physique and high mentality gained entrance. But here from the standpoint of national eugenics two problems arise for which at present we know little in the way of solution. The first problem is concerned with the relation between the new immigrant and our climate; he may be intellectually and physically

above the average of the existing population, but that does not demonstrate that he or his stock can maintain those advantages permanently with a very much changed environment. We are quite certain that the superior Scandinavian or German workman does not necessarily degenerate in our climate—it is not too unlike his own—but this becomes far less certain in the case of the Armenian or the Arab. It may be unwise to disregard race entirely when a standard of physique and intelligence has been established.

The second problem is even more difficult of solution: an immigrant may pass the highest standard we can select; he may be quite fitted to our climate, but other difficulties arise. Will he blend with our population? Let us put on one side any idea that we ourselves are a pure race; we are a nation of ineradicable hybrids. But there are limits to successful hybridism, and at present we understand very little about them. By both intelligence and physique there are Japanese and Chinese well above any immigration standard likely to be enforced; both races appear to readily adapt themselves to our climate. But would a stream of the most intelligent Japanese into Great Britain—or for the matter of that a stream of the most intelligent Englishmen into Japan—be really desirable for either nation? If the immigrants do not blend with the old population, but maintain themselves as a group apart, we reach a nation within a nation, the immigrants if many tend to have divergent interests, and if few may become parasitic; in both cases arises a source of real national danger. On the other hand, if the immigrants do blend, science has at present little to tell us of the value of the resulting hybrids. Too little work has been devoted to the study of human hybrids, and what has been done has too often been biased from the standpoint of the observer, who has started more or less pledged to a narrow view-point or to some hereditary theory. How little we know about the F_1 generation of English and Japanese; and still less about F_2 and F_3! We have really no idea whether the maintenance of a high grade of intelligence and of physique is possible. We know as little at present about the ultimate value of Eurasian and Africander crosses.

Such a slight sketch as the above may, perhaps, suffice to convince the reader of the thorny problems of immigration into already settled countries. The student of national eugenics desires in every way to improve and strengthen his own nation. He would do this by intra-national selection for parentage, and by the admission wherever and whenever possible of superior brains and muscles into his own country; but while he naturally objects entirely to indiscriminate immigration, he has to confess that a mere test of superior mentality and physique may not be adequate in the case of the more widely divergent races. We simply have not the knowledge at present requisite to set a value on the hybrids which may result from crosses even of the physically and mentally best in Caucasian, Oriental and African races*. It is perfectly idle to talk in these matters either of pride of race or of the common humanity of all mankind. The reasons that can be given for admitting orientals as permanent immigrants into a densely populated occidental country apply equally to the admission of occidentals into oriental countries. When it comes to settling or resettling a sparsely peopled country, then it is possible to find out whether the individual is a real humanitarian or not, according as he thinks only of his own race, or of the actual suitability of other races, as judged by their culture and their adaptation to the proposed environ-

* For many years past the Galton Laboratory has been crossing the "nordic" Pommeranian with the "oriental" Pekinese even to the F_8 and F_{10} generations. Smaller and larger types than either of the original stocks have resulted, but neither in mentality nor physique has a strain equal to the pure dogs been evolved, and there has been some tendency to physical and mental defects; due probably to the considerable divergence in skeletal form of the originals. The skeletal differences between the Japanese and our Nordic races are probably as great, but the analogy can only serve as a caution, not as an argument.

ment. From this standpoint it is probable that the Japanese would be far more valuable than men of Nordic race in many of the Pacific islands, and that the Hindoo and still more the Chinaman might, to the great advantage of general world progress, replace the negro in many districts of Africa.

In the years preceding the Great War the question of indiscriminate immigration—especially that of the Polish and Russian Jews into the East End of London, and the poorer quarters of other large towns in Great Britain—had become a very vital one. It was asserted on the one hand that the immigrants were a useful class of hard workers fully up to the level of the English workman in physique and intelligence, and on the other hand these immigrants were painted in lurid colours as weaklings, persons with a low standard of life and of cleanliness, under-bidding native workers in sweated trades and spreading anarchic doctrines, so that the continued inflow of this population was leading not only to economic distress, but to a spread of doctrines incompatible with the stability of our social and political systems.

It was very obvious to the onlooker that whatever might be the real facts of the situation, those facts were not available for the calm discussion of the case. The partizans of cheap labour and the partizans of monopolistic trades-unionism were both undoubtedly acting from personal and party inspirations, and there was no one whose business it really was to find the true answer to the question of whether Great Britain could assimilate to its national profit this mass of new and untested material.

The whole problem of immigration is fundamental for the rational teaching of national eugenics. What purpose would there be in endeavouring to legislate for a superior breed of men, if at any moment it could be swamped by the influx of immigrants of an inferior race, hastening to profit by the higher civilisation of an improved humanity? To the eugenist permission for indiscriminate immigration is and must be destructive of all true progress. Such progress is only possible where intra-racial selection is combined with a large measure of isolation. No sane man, however, doubts that at various periods of English history our nation has been markedly strengthened by foreign immigration. The Huguenots brought us a most valuable element, the Dutch a second, and, I think, we may add to these invasions, that of the Germans of 1848— the "Achtundvierziger" —many of whom were indeed of Jewish extraction. But these special cases do not prove the general desirability of free immigration. They prove the value of it, if the immigrants are men of high mentality and firm purpose. In the cases referred to we had to deal with men of marked character and originality; men often of peculiar craftsmanship, driven from their homes by religious or political persecution, mostly coming from as high a civilisation as our own, if not indeed from a higher one. They were capable of blending and have largely blended with our own racial elements. Except for antiquarian interest we no more trouble about their origin than we worry whether a fellow countryman is mainly of Anglo-Saxon, Danish or Norman blood. It was undoubtedly from the standpoint thus outlined that the members of the Eugenics Laboratory started their investigations into the most recent sources of immigration into this country. They recognised no wider principle than that of national welfare. If a man be a good Englishman in the first place, and in the second be sound in body and mind, then his religion is his own private concern; he may, for aught we have to do with the matter, be a good Christian, a good Jew or a good Freethinker. The only sound doctrine on such a theme is that of Lessing's fine old Hebrew Nathan der Weise: seek the man beneath the Moslem, Christian, Jew.

We did not select the Polish and Russian immigrants because they were Jews, but because they formed a large and accessible body of immigrants who could be worked relatively easily from one centre. Everybody recognises the services of the English Jew to our national welfare. He has

contributed honourably to politics—to both the legal and civil executives—to finance, to commerce, to literature, to the arts, and to science. We have known him at school; we have known him at college, and worked with him and alongside him in after life. The differences are no greater than in the case of a Catholic fellow-subject. In the University of London the portraits on its walls indicate how large and distinguished a part both as benefactor and *alumnus* has been taken by the English Jew.

But the English Jew has been theoretically a free man for a century, and practically one for a much longer time. In the case of the Russian and Polish Jews there has been more or less continuous oppression, nay a veritable selection going on for a much longer period. Such a treatment does not necessarily leave the best elements of a race surviving. It is likely indeed to weed out the mentally and physically fitter individuals, who alone may have had the courage to resist their oppressors. We can sympathise with a man who has suffered hard treatment, but that in itself is not an adequate eugenic reason for granting him citizenship in a crowded country. For that citizenship we demand physical and mental fitness; we need the possibility of an ultimate blending and we need full sympathy with our national habits and ideals. Those of us who had occasion to travel during air-raids on London will not lightly forget the sights and sounds we encountered among the Yiddish-speaking population who sought refuge in the tube stations. But that is only an isolated aspect of the problem; we know also of acts of great courage among Jews of Russo-Polish origin. We know further of brilliant achievements and university distinctions gained by recent immigrants or their children. No satisfactory conclusions can be reached by citing individual instances which may tell one way or the other. There is only one solution to a problem of this kind, and it lies in the cold light of statistical inquiry. And, we will venture to say it, we believe there is no institution more capable of impartial statistical inquiry than the Galton Laboratory. We have no axes to grind, we have no governing body to propitiate by well-advertised discoveries; we are paid by nobody to reach results of a given bias. We have no electors, no subscribers to encounter in the market-place. We firmly believe that we have no political, no religious and no social prejudices, because we find ourselves abused incidentally by each group and organ in turn. We rejoice in numbers and figures for their own sake and, subject to human fallibility, collect our data—as all scientists must do—to find out the truth that is in them. The tradition of the Laboratory has always been that until data are reduced and analysed no member of the staff holds the slightest opinion as to what might, ought or will come out of them. And we can safely assert that until a year ago no one engaged on this work had any idea of what our judgment on the alien Jewish population was likely to be. Let us once more emphasise the fact that we did not take the group of Russian and Polish Jews for investigation because it was a non-Christian immigration, or because these people were racially remote, or because their traditions are against blending with their hosts. We do not dismiss these points as unworthy of serious consideration, we believe them to be nationally of importance. But we propose to lay no weight on them here, but to consider merely the question of whether a mental and physical immigration test is desirable. We could equally well have answered the question on an alien Italian or alien Greek population had such been available. But the bulk of the immigration from 1906 onwards was Russian and Polish, and the difficult question of indiscriminate immigration in 1908 turned largely on the alien Jews. Over them the fight waxed hottest, and about them the most unblushing statements were made without any firm basis in fact. Yet owing to the concentration of Jewish alien children in the Jews' Free School, it was possible to reach the best of them in fairly adequate numbers with moderate ease.

The hot controversy over the alien Jewish population rendered a careful statistical inquiry essential; and this not only from the standpoint of the Gentile Englishman, but also from that of the English Jew. In the former case the problem was: Are these newcomers worthy compatriots? In the latter case it was a question not only of worthy compatriots, but of worthy members of a religious society. The late Lord Rothschild did immense service for Jewish, in particular alien Jewish education, by the support he gave to that wonderful institution, the Jews' Free School in Aldgate. But both he and other English Jews admitted the gravity of our problem by contributing to the fund we had to raise in order to carry through the work. The scheme was to examine physically, mentally and medically the children of the Jews' Free School; and then with the assistance of "field-workers" or home visitors report on the home conditions of their parents. We enlisted the friendly aid of the Headmaster of the school, Mr L. G. Bowman, who gave us all the information in his power; we have also to thank the Headmistress and the staff for much assistance. The London County Council permitted medical officers appointed by the Laboratory, of whom one was a Jew and the other a Gentile, to examine in more detail the children in association with their own medical men. A special examination was made of the children's eyesight by ophthalmologists of our own selecting; and three Jewish ladies each with a knowledge of Yiddish and German, and having experience in the inquiry work which precedes the distribution of Jewish charities, visited the homes and filled in our schedules. We can safely say that while it has probably been impossible to avoid errors, they are not biased errors. Our recorders and observers were sympathetic and for the most part Jews. We found on every side help, suggestion and kindness, and we desire to state emphatically how much we owe not only to the staff of the Jews' Free School, not only to the authorities of the London County Council, but to the medical men and the field-workers. While, however, we owe to their assistance the data, we desire to state expressly that they are in no way responsible for its reduction or interpretation; that is the work of the Eugenics Laboratory and has been conducted by the usual methods of modern statistical inquiry*.

In certain directions only we met with difficulty. Perhaps the only serious case was the examination of eyesight. Examination of the accurate character we attempted took a long time, and the girls—even some of the elder ones—became nervous and there were even hysterical threatenings. This experience was unexpected, it had not been found with Gentile children, and was not the case with the Jewish boys. We had therefore—except for mere vision tests—to limit ourselves to the boys. Even in this case owing to the time and therefore expense involved we did not succeed in taking a sample of more than about 500 cases. It is large enough however to base certain conclusions upon. Our data were collected on three schedules†:

(*a*) the ordinary London County Council medical school inspection card (C);

(*b*) a schedule (A) to be filled in at the school and largely covering information provided by the staff, or the additional medical examiners;

(*c*) a schedule (B) to be filled in by the field-workers.

Ultimately schedules (*a*), (*b*) and (*c*) were clipped together and formed the dossier of the individual child.

About 600 such dossiers were obtained for boys and nearly the like number for girls. These provide a fair random sample of the population.

* We have to thank Mrs Mary Curwen, formerly assistant in the Laboratory, for aid in the preparation of sorting-cards, and for the preparation of some of the tables.

† These schedules are reproduced in Appendix I, p. 51.

The children's intelligence was measured by their own teachers using the Biometric Laboratory scale*. It has been shown that this scale adequately applied is:

(*a*) Sensibly independent of age, i.e. it is a measure of innate mental power, not of acquired knowledge.

(*b*) The correlations of the teachers' estimate by this scale on other material with the Stanford revision test made by independent observers range from 0·6 to 0·9. It is not probable therefore that better results would have been obtained by any form of Binet-Simon mental testing†, for which at that time we had no comparative material available.

In our section on Intelligence we shall show that (*a*) is confirmed by the present data.

While discussing the Jewish children we shall not confine our attention solely to their comparative standards. There are many side-questions for which our material provides some answer of more general application than the immigration problem, and we shall deal with these in the course of our examination. Our only regret is that two causes have to some extent interfered with the fullest consummation of our work. The first was the lack of adequate funds; we could not put on a large staff of workers to carry the work through rapidly, and accordingly our numbers are not as ample as we could have wished. The second was the outbreak of the war, which stopped the work entirely—the whole staff of the Laboratory being occupied for four or five years in very different researches. When the war ceased, the whole school population had practically changed and it was not feasible to take the investigation up again where we had left it, had indeed the impoverished condition of the Eugenics Laboratory permitted it. Thus many of the children whose medical cards were completed had never had their school and eyesight schedules filled in, and numbers with both schedules filled in had not been home visited‡. The bulk of these children had left the school and could no longer be followed up and examined. Of the children of whom we had full records there is no reason to suspect, however, that they are not a random sample of the alien Jewish population. Even of the small percentage of children said to be the offspring of English Jews, i.e. of parents born in England, the names of the larger number signified a not very distant origin in Eastern Europe.

(ii) *On the Parentage of the Alien Jewish Children.* Among the fundamental facts to be examined are the origin of the parents, their nationality of birth (usually that of their present nationality as few appear to be naturalised) and the languages they can or do speak. It was remarkable how many parents who had passed years in England were still incapable of speaking English.

Table I. *Intensity of Lingual Alienism in the Parents of the Children.*

	Fathers	Mothers
Do not speak English at all	16·3 %	22·0 %
Speak a little English	9·7	11·5
Speak but cannot read English	38·3	48·5
Speak and read English	35·7	18·0

Thus it follows that of the Fathers 64·3 % and of the Mothers 82·0 % fail to have the knowledge of English requisite to make their generation effective citizens of this country.

If we suppose as seems probable that the parents of Lithuanian, Galician and "Austrian" descent were really Poles, then Table II shows us that 88 % to 89 % of this Jewish population

* See Appendix I, Schedule (D), p. 55.

† Most certainly not, if some recent forms of mental tests had been adopted which we find have a high correlation with age.

‡ These facts account for the variety of the numbers to be found in different classes of the tables.

were of Russian or Polish nationality. Only 6 % of the Fathers were English by birth or naturalised. The parents of the remaining 5 % were, in about equal percentages, from Eastern and Western Europe. Of the children of these parents, who were in the school at the time of our census, 28·3 % were born abroad and 71·7 % were born in England, and therefore according to the English law are of English nationality.

Table II. *Percentage Nationality of Alien Jewish Parents.*

Nationality	Father		Mother	
English	6·0		7·0	
Russian	56·7		54·4	
Polish	28·0		29·0	
Lithuanian	0·0	32·2	0·1	33·2
Galician	1·0		1·0	
Austrian	3·2		3·1	
Rumanian	2·4		2·1	
Hungarian	0·2	2·8	0·2	2·5
Bulgarian	0·1		0·1	
Egyptian	0·1		0·1	
Swedish	0·1		0·1	
Dutch	1·4	2·3	1·9	2·9
German	0·8		0·9	

The next point to be considered is the general education of these foreign Jews. We inquired whether the parents were able to *read* any language whatever, Yiddish, German, English, etc., and found that out of the 1214 parents of boys 401 were illiterate, i.e. 33·0 %, and of the 1118 parents of girls 386 or 34·5 % were illiterate. Of the 1166 pairs 170 or 14·6 % gave both husband and wife illiterate.

There were 549 marriages or 47·1 % where both parents were able to read some language or other, and 447 or 38·3 % where one of the two parents was illiterate. It is accordingly clear that about one-third of these immigrants must be totally uneducated. Of course this defect is cured in the offspring generation, like the defect of ignorance of English. It is certainly a very serious matter that no educational standard is imposed on immigrants into this country, but in order to judge the matter adequately we must consider how it influences the intelligence of the children. If the illiteracy is not due to lack of intelligence, but to lack of educational opportunity, it will have little influence on the intelligence of the children, and the evil will be limited to the parental generation which will largely lack an essential for good citizenship. We shall discuss in the next section the general intelligence of the children and how it has been determined. Here we will give the results, merely noting that x is the intelligence of the offspring, y is the literacy of the parents. We found results given in the table below:

Table III.

Parents	*Boys*								*Girls*							
	Very Able	Capable	Intelligent	Slow Intelligent	Dull	Very Dull	Mentally Defective	Totals	Very Able	Capable	Intelligent	Slow Intelligent	Dull	Very Dull	Mentally Defective	Totals
Both Literate	9	40	115	92	26	4	—	286	1	23	70	90	47	32	—	263
One Literate	8	32	80	83	30	7	1	241	2	8	47	83	43	21	2	206
Both Illiterate	1	8	26	33	11	1	—	80	4	5	24	36	12	7	2	90
Totals	18	80	221	208	67	12	1	607	7	36	141	209	102	60	4	559
Not Classed	1	—	3	7	1	—	—	12	—	1	8	12	4	1	—	26
Totals	19	80	224	215	68	12	1	619	7	37	149	221	106	61	4	585

Adopting a normal scale for both variates we deduce:

	Boys	*Girls*
Corrected correlation ratios:	$\eta_{x.y} = \cdot0977 \pm \cdot0271$, $\bar{\eta}_{x.y} = \cdot0574$,	$\eta_{x.y} = \cdot0923 \pm \cdot0283$, $\bar{\eta}_{x.y} = \cdot0598$,
	$\eta_{y.x} = \cdot1242 \pm \cdot0270$, $\bar{\eta}_{y.x} = \cdot1189$.	$\eta_{y.x} = \cdot2063 \pm \cdot0273$, $\bar{\eta}_{y.x} = \cdot0946$.
Class index correlations:	Intelligence: ·9573,	·9597,
	Literacy: ·8765.	·8226.

Of these values only one out of the four correlation ratios—having regard to the values of $\bar{\eta}$ and the probable errors—can definitely be looked upon as significant, i.e. that for literacy of the parents on the intelligence of their daughters, and this is largely influenced by the four very able girls born to parents both illiterate. To test the matter more closely a fourfold table was made thus:

Daughter's Intelligence.

Parents' Literacy	Intelligent and over	Slow and under	Totals
One or both Illiterate	90	206	296
Both Literate	94	169	263
Totals	184	375	559

We found for tetrachoric r

$$r = - \cdot1186 \pm \cdot0460.$$

Thus the more intelligent children tend to be born of the more literate parents. But the correlation having regard to the probable error cannot be asserted to be definitely significant.

On the other hand the Son's Table runs:

Son's Intelligence.

Parents' Literacy	Intelligent and over	Slow and under	Totals
One or both Illiterate	155	166	321
Both Literate	164	122	286
Totals	319	288	607

and gives

$$r = - \cdot1423 \pm \cdot0425.$$

This is most probably significant and therefore confirms the not definitely significant result from the girls. We think it is necessary to conclude that there is some but not a very marked relation between literacy of parents and intelligence of the children.

Taking the range of the "Intelligent" to represent 100 units of mind—"mentaces"—the standard deviation for boys = 104·97 mentaces, and we find that the mean of the children of entirely literate parentage is ·08485 × standard deviation = 8·8 mentaces above the mean of the general Jewish boy population. The mean of this population already lies in the "Intelligent" group at a distance of 5·21 mentaces from the "Slow" boundary. Accordingly, if only literate parents had been allowed to enter the country, the mean of the Jewish boys would have been at 14·0 mentaces instead of 5·2 from the "Slow" boundary. This is of course something, but it is only about one-seventh up the range of 100 mentaces covered by the "Intelligent" group. We might have obtained a far larger advance had we limited the immigrant parents not to the literates but to parents, who themselves were "Very Able" or "Capable." This group forms about one-sixth of the Jewish boy population and may be assumed to be about one-sixth of the parental population. By selecting for admission about 17 % only of the proposed immigrants we should

have obtained an immigrant population of a higher average intelligence than our own population and therefore from this side a valuable addition to the latter. The daughters of parents who are both literate have a mean ·01625 × standard deviation = 1·628 mentaces, since the standard deviation = 100·21 mentaces. But the mean intelligence of the girls is very low, being not quite half-way down the "Slow" group, i.e. 44·10 mentaces from the "Intelligent" lower boundary. Hence the selection of literate immigrants would only raise very slightly the intelligence of the admitted Jewish female children*.

We must accordingly conclude that to admit only literate immigrants would not raise appreciably the offspring population, and therefore since intelligence is strongly inherited the illiteracy of the parents is rather a measure of their want of education than their want of intelligence†.

The refusal to admit illiterates must be regarded from the standpoint of the parental rather than the offspring generation. Can an illiterate man make a good citizen? That is a quite discussable point, but as we shall see shortly illiteracy compels an immigrant to seek the lowest grades of employment.

Father's Employment. We divided the father's employment into eight main groups covering a total of 1183 men. These groups were as follows:

(1) Hawkers and ragsorters.

(2) Transport: porters, messengers, collectors, cabdrivers, furniture removers, etc.

(3) Clothing trades, etc.: engaged in making or repairing clothes, boots, umbrellas, etc.; furriers, leather-dressers, the lower types of factory workers, tobacco-cutters, cigarette-makers, bag and purse makers, packers. The great bulk of this class, however, are tailors and cobblers.

(4) Bakers, barbers and tobacconists‡.

(5) Building trades: carpenters, masons, bricklayers, painters, paperhangers, glaziers, plumbers, etc.

(6) Higher type of craftsmen: engineers, cabinet-makers, tin-smiths, watch-makers, wood-carvers, etc.

(7) Small shopkeepers, clothiers, publicans, and general dealers.

(8) Brain-workers: Rabbis, Hebrew-teachers, music-teachers, interpreters, small manufacturers and clerks.

* We made some rough attempt to ascertain whether the literacy of the parents depended to any extent on the duration of their stay in this country. Assuming that the illiterate state was due to the absence of educational opportunities in the land of their origin, it might be supposed that the parents who had been longer in this country would have had more chance of self-education. We therefore correlated literacy and the foreign or English birth of the immigrants' children (average age about 11). One class would on the whole have been longer, the other less than 11 years in England. We found no association whatever between literacy and length of stay in England.

† Another measure of the effect of illiteracy is exhibited as follows:

Boys and Girls (total, 1166).

Nature of Parentage	Percentage of Able and Capable	Percentage of Dullards
Both Parents Illiterate	10·6	19·4
One Parent Illiterate	11·2 } 11·0	23·3 } 22·2
Neither Illiterate	13·3	19·9
Whole Population	12·1	21·1

Again we see that illiteracy of parents is associated but only slightly with child's intelligence.

‡ Chiefly employees.

The following are the occupational percentages:

Table IV. *Occupations of Fathers of Alien Jewish Children.*

(1)	Hawkers and Ragsorters	7·1 %	71·9 %
(2)	Lower Grades of Transport	2·1	
(3)	Clothing Trades, etc.	55·9	
(4)	Bakers, Barbers and Tobacconists ...	5·4	
(5)	Building Trades	1·4	
(6)	Higher Type of Craftsmen	13·6 %	28·1 %
(7)	Small Shopkeepers	12·9	
(8)	Professional Classes	1·6	

If we draw a line between classes (5) and (6) to mark the division between those groups which demand a considerable amount of intelligence and those which require less, we should have 28 % who follow higher and 72 % lower grade occupations. Of the latter slightly over three-quarters were in what at the time of our census were termed "sweated trades" and 7 % to 9 % more were in a very low grade of labour. At the same time many of these alien Jews are reported to be very able tailors.

We have now to inquire how far a restriction of immigration based on the trade of the immigrant would result in a higher intelligence of the offspring generation. We have to keep boys and girls apart as their intelligence in the case of these Jewish children is so different.

Table V. *Occupation of Father and Intelligence of Offspring.*

Occupation of Father, see p. 13	*Boys*								*Girls*							
	Very Able	Capable	Intelligent	Slow	Dull	Very Dull	Mentally Defective	Totals	Very Able	Capable	Intelligent	Slow	Dull	Very Dull	Mentally Defective	Totals
(1)	1	6	16	13	5	1	—	42	—	6	9	14	6	7	1	43
(2)	—	—	4	4	3	—	—	11	—	2	—	6	3	3	—	14
(3)	11	42	114	124	35	8	—	334	4	12	76	130	53	28	1	304
(4)	1	1	10	1	3	—	—	16	—	—	4	5	4	1	—	14
(5)	—	1	5	2	2	—	—	10	—	3	2	6	3	1	1	16
(6)	3	16	34	34	10	3	—	100	1	6	24	35	14	8	—	88
(7)	3	11	26	29	7	1	—	77	1	5	28	17	22	12	1	86
(8)	—	1	6	4	1	—	—	12	—	2	5	4	—	—	—	11
Totals	19	78	215	211	66	13	—	602	6	36	148	217	105	60	4	576
Unclassed	—	2	9	4	2	—	—	17	1	1	1	4	1	1	—	9
Totals	19	80	224	215	68	13	—	619	7	37	149	221	106	61	4	585

Father's Occupation	*Boys*		*Girls*	
	Very Able and Capable	Dullards	Very Able and Capable	Dullards
Lower Grades	15·3 %	13·8 %	6·9 %	28·6 %
Higher Grades	18·0	11·6	8·1	30·8
All Grades	14·4	13·2	7·5	29·2

The percentages of the able and of the dullards may be first examined. The boys run smoothly enough, the sons of fathers following higher grade occupations having higher percentage of able and lower percentage of dull. The case of the girls however is not so straightforward, for while the fathers of higher grade occupations have more able daughters they have also more dullards

than the fathers of lower grade occupations*. The fact is that the differences are so slight that they are hardly significant having regard to their probable errors.

To test further the matter contingency distributions were formed, which will be found in Table VI. The values for ϕ^2 before correction and for $\overline{\phi}^2$, the mean square contingency for no association, are as follows:

$$\textit{Boys: } \phi^2 = \cdot 023{,}579, \qquad \overline{\phi}^2 = \cdot 039{,}867.$$
$$\textit{Girls: } \phi^2 = \cdot 046{,}281, \qquad \overline{\phi}^2 = \cdot 041{,}667.$$

Table VI. *Contingency between Occupation of Father and Intelligence of the Children.*

Intelligence Categories.

Father, Occupation grade as on p. 13	*Boys*						*Girls*					
	Very Able, Capable	Intelligent	Slow	Dull	Very Dull, M. Defective	Totals	Very Able, Capable	Intelligent	Slow	Dull	Very Dull, M. Defective	Totals
(1) and (2)	7	20	17	8	1	53	8	9	20	9	11	57
(3)	53	114	124	35	8	334	16	76	130	53	29	304
(4) and (5)	3	15	3	5	—	26	3	6	11	7	3	30
(6)	19	34	34	10	3	100	7	24	35	14	8	88
(7) and (8)	15	32	33	8	1	89	8	33	21	22	13	97
Totals	97	215	211	66	13	602	42	148	217	105	64	576

We see that for boys ϕ^2 is less than $\overline{\phi}^2$; we cannot therefore assert any significance in the result. In the case of girls ϕ^2 differs from the corresponding $\overline{\phi}^2$ by less than the probable error. Accordingly the occupation of the father is no criterion of the intelligence of the children. It is improbable that the employment of the father in this country represents except in the case of highly trained craftsmen his calling in the place of his origin. It may not on the whole be a measure of his intelligence at all, because he is probably forced to undertake whatever job is open to him, and this will largely lie in the direction of the badly paid or sweated trades. Hence it would not be possible to limit immigration by admitting only those immigrants where there was a labour deficiency. The entrants would be drawn largely into the lowest grades of labour, and we should not sift out the intelligent from the unintelligent. With the exception of the higher type of craftsmen—and they form only about an eighth of the immigrants—former employment or proposed employment would form a very unsafe criterion of the admitted population being mentally superior and likely to breed children of above the average native intelligence†.

We now come to the health of the alien Jewish population. Out of some 1200 fathers we found

* If we include the Slow we find:

Percentage of Offspring, Slow, Dull or Mentally Defective.

	Boys	*Girls*
Fathers of Lower Grade Occupations	49·2 %	69·8 %
Fathers of Higher Grade Occupations	44·9	67·0

The girls now give the difference *a priori* probable, but it is too slender to lay any stress whatever on.

† We have tested in several ways the problem of whether the occupation of the alien Jewish fathers is determined by their ability or only by their necessity. If the low-grade trades are followed because the immigrant can on reaching this country find no better suited occupation owing to the fullness of the labour market, then after he has been a number of years in this country there should be some betterment in the immigrant's occupation. On the whole, fathers of children

nearly 400 or more exactly 33 % were in rather delicate, delicate or very delicate health. Of the corresponding mothers 32 % were in similar unsatisfactory health conditions. The percentages of indifferent and bad health in the corresponding categories of the London working class population—as far as we have yet been able to determine them—are 20·2 % and 20·3 % for fathers and mothers respectively. There can, we hold, be little doubt that this alien Jewish population has something like 50 % more bad health (i.e. 20 % + 10 %) than the corresponding native population.

We next ask whether this large amount of bad health in the parents materially handicaps the intelligence of the children. We have the following four contingency tables:

Table VII. *Intelligence of Child and Parents' Health.*

Health of Father	Intelligence of Son							Intelligence of Daughter						
	Very Able	Capable	Intelligent	Slow	Dull	Very Dull, Mentally Defective	Totals	Very Able	Capable	Intelligent	Slow	Dull	Very Dull, Mentally Defective	Totals
Very Robust	—	1	5	5	2	1	14	—	—	4	4	3	—	11
Robust	7	31	83	73	21	5[1]	220	2	14	62	80	40	23[2]	221
Normal	5	20	67	70	16	3	181	4	11	35	62	28	14	154
Rather Delicate	5	12	28	26	11	2	84	—	3	16	27	13	15[1]	74
Delicate	2	10	30	29	17	2	90	—	5	24	31	14	9[1]	83
Very Delicate	—	5	11	9	1	—	26	1	2	5	14	6	3	31
Dead	—	1	—	2	—	—	3	—	—	1	—	1	—	2
Totals	19	80	224	214	68	13[1]	618[4]	7	35	147	218	105	64[3]	576[5]
Health of Mother	Intelligence of Son							Intelligence of Daughter						
Very Robust	—	2	4	5	1	—	12	—	—	3	4	2	—	9
Robust	3	24	73	58	19	3	180	1	13	41	51	28	13[1]	147
Normal	8	27	88	93	26	6	248	4	12	50	81	37	27[1]	211
Rather Delicate	3	13	27	30	7	1	81	1	6	27	30	13	9	86
Delicate	2	11	28	21	13	3[1]	78	—	6	24	41	23	14[2]	108
Very Delicate	2	3	4	7	2	—	18	1	—	4	8	2	1	16
Dead	1	—	—	1	—	—	2	—	—	—	—	—	—	—
Totals	19	80	224	215	68	13[1]	619	7	37	149	215	105	64[3]	577[6]

[1] One mentally defective. [2] Two mentally defective. [3] Four mentally defective.
[4] One case Father's Health not given. [5] Nine cases Health of Father unknown. [6] Eight cases Health of Mother unknown.

born in England must have been longer in the country than fathers of children born abroad and so have had more opportunity of finding an employment suited to their powers. We find:

	Occupations		Totals
	High Grade	Low Grade	
(α) Fathers of children born here	28·9 %	71·1 %	1221
„ „ abroad	32·5	67·5	483
(β) Fathers of children who have been at least 11 to 15 years in England	30·9	69·1	742
Fathers of children 11 to 15 years born abroad	34·4	65·6	311
(γ) Fathers of children 6 to 11 years who have not been longer than 6 to 11 years in England	28·8	71·2	170

Probably the fairest comparison is (β) for it insures that the fathers are much of the same age; if we compare the first entry of (β) with (γ) then we are comparing older and younger men. There is no evidence here of any marked betterment of occupation with a longer stay in this country. Again measuring roughly the father's period in England by whether his child was or was not born in this country, i.e. case (α), we find:

Father's Occupation.

Residence	Low Grade	High Grade	Totals
Long	868	353	1221
Short	318	165	483
Totals	1186	518	1704

with the correlation $r = + \cdot0887 \pm \cdot0299$, significant but slight; the longer the stay, the *lower* the grade of occupation. We note that the age of fathers cannot be directly measured by whether their children were born abroad or in England, the average age of the children born abroad is only 2·5 months greater than that of the children born in England; the correlation between birthplace and age is only 0·063. The correlation between age of child—which is to some extent a measure of age of father—and the grade of his occupation is only $\cdot056 \pm \cdot028$, i.e. scarcely significant, the Higher Grade occupations having children about 1·5 months older than those of the Lower Grades.

In working out these cases, it was considered better to include the few dead with the Very Delicate parents rather than to exclude them altogether. The values of the raw mean square contingencies (ϕ^2) were obtained for all four tables and compared with mean square contingencies on the assumption of no association. We find:

Father's Health and Intelligence of Son:	$\phi^2 = \cdot 031{,}953$,	$\bar{\phi}^2 = \cdot 040{,}453$.
„ „ Daughter:	$\phi^2 = \cdot 022{,}000$,	$\bar{\phi}^2 = \cdot 041{,}667$.
Mother's Health and Intelligence of Son:	$\phi^2 = \cdot 037{,}193$,	$\bar{\phi}^2 = \cdot 040{,}388$.
„ „ Daughter:	$\phi^2 = \cdot 015{,}579$,	$\bar{\phi}^2 = \cdot 041{,}594$.

In every single case accordingly ϕ^2 is less than $\bar{\phi}^2$ and we are unable to assert any relation between the health of the parent and the intelligence of the child. If larger numbers should show some significant relation, the above results still indicate that it will be of no prognostic value.

How far the parental delicacy is due to hardships suffered by the immigrants before they reached this country, or due to present environment, it is not possible for us to determine. But it is clear that selection of parents by health would not in this case modify the intelligence of the children. A health test for immigrants would, however, make the parents more useful citizens, and, considering the high correlation between health in parent and offspring*, their children a healthier group. The reader must remember that while health in offspring and parents and intelligence in offspring and parents are highly correlated—*circa* 0·5—we have not succeeded in finding any correlation of value between health and intelligence. Thus the absence of correlation between parent's health and children's intelligence is not surprising.

(iii) *On the Racial Homogeneity of the Alien Jewish Children.*

(*a*) This problem is one of some importance from the anthropological standpoint. As immigrants it is quite conceivable that an eastern race may be both physically and psychologically better fitted to a western environment by an infusion of European blood. Many Jews have great pride of race, and almost treat a suggestion of mixture as an insult. As a matter of fact there is for the anthropologist no such thing as a pure race of man—possibly none has existed since the days of palaeolithic man. What the anthropologist is concerned with in a race is the extent and intensity of isolation which a given community has been subjected to. The idea of purity of race in the Jew has been emphasised by the religious belief that all Jews are descended from Abraham—a belief on a par with the past belief of Jew and Christian alike that all men are descended from Adam. It has further been strengthened not only in belief but in fact by the isolation and persecution of the Jews during the Middle Ages. The bulk of the Russian and Polish Jews seem to have migrated via the Black Sea, and while in the centuries of transition they were often a race wholly apart, there appears to have been a time when they probably more or less amalgamated with certain other elements in the shifting population of Southern Russia, and something of the nature of a Jewish kingdom was founded. In more definite historical times we find them in favour with the Polish kings and great landowners, who used them as tax-gatherers and estate agents. In such positions they acted as a screen for the oppressions of the ruling class, and were detested by the cultivators and small traders. Thus the municipalities of the towns and the peasantry were easily excited against the Jews, and while the king and nobility favoured them as their tools, they gave them away, when the anger of their people at oppression had to be appeased. It is not for us to enter here into that three-party fight, ruling class, commonalty and Jewry, which played such a considerable rôle in mediaeval Polish history, and which largely explains the feelings which in an ignorant people have given rise to age-long oppression and

* *Biometrika*, Vol. III, pp. 145–54; Vol. IX, pp. 320–29.

bitterness, ending in pogroms. But one thing does concern us, that there was probably during this later period only occasional intermixture. The Jews as immigrants were never absorbed, and they did not become an integral portion of the people among whom they lived.

That essential feature of Jewish immigration—a feature which differentiates the Jewish largely from other immigrant races, and widely from the other religious sects of this country—must always be kept in mind. From the standpoint of the immigrant racial purity may be a dominating belief, from the standpoint of the national statesman the suitability of the immigrant must depend not only on what he brings to the nation, mentally and physically, but also on the possibility of his assimilation. Many of the old stock of English Jews have fully recognised this; they have intermarried, as Huguenots, Dutch and Germans have intermarried, with the settled race. For them Jewry is a religious faith and is something apart from the question of nationality and racial purity. From the standpoint of the host-nation, this is undoubtedly the better attitude and might very reasonably be made a criterion of the fitness of a race for immigration into a settled country. It is from this aspect of the matter that stress must be laid on the question of racial purity—the defect in racial purity may be a measure of the immigrant's capacity or willingness to amalgamate.

As tests in the case of our alien Jews we may take the Cephalic Index, and the Pigmentation.

(*b*) *Cephalic Index.* In dealing with a rather mixed series of Jewish crania the senior author found the mean cephalic index to be 80·6; this corresponds to a cephalic index on the living head of about 82·5. It may be compared with the 83 to 84 of modern South Germans and the 78 of modern English. Our alien Jews gave a cephalic index of 82·5, well in accord with the determination from the skulls.

Table VIII. *Cephalic Index of Jews.*

Authority	Number of cases	Mean Index	Proportion of		
			Long Heads (Dolichocephaly)	Medium Heads (Mesocephaly)	Round Heads (Brachycephaly)
Dybrowski[1]	67	82·2	19·4 %	26·9 %	53·7 %
Pearson from Skulls[2]	28	82·5	22·2	27·8	50·0
Alien Jewish Boys	519	82·5	9·1	23·9	67·0
Kopernicki	313	83·5	4·8	10·9	84·3
Blechmann	100	83·2	3·0	11·0	86·0

[1] Probably with Gentile admixture.

[2] A very small series from a great variety of European countries.

Our alien Jewish boys stand roughly midway between the adults of Dybrowski with 53·7 % of brachycephaly and those of Kopernicki with 84·3 %. Allowing for some change of cephalic index with age* the defect of brachycephaly in our alien Jewish boys seems noteworthy. The last two groups show what a small proportion of long heads are to be found among a population asserted to be pure, and there appears some evidence of an infusion of blood into our alien Jewish boys from a more dolichocephalic race.

* We do not think that the cephalic index changes markedly with the age as some recent observers have concluded. The correlation between the cephalic indices of the same individual at 11 and 18 years is between ·8 and ·9.

(*c*) *Hair Colour.* We now turn to the pigmentation of the hair. We have the following data, based on about 500 Jewish boys:

Table IX. *Hair Pigmentation of Jews.*

Hair Colour of Alien Jewish Boys.

Black	Very Dark Brown	Dark Brown	Medium Brown	Light Brown	Flaxen	Slaty	Red
3·9 %	21·1 %	26·7 %	29·9 %	14·7 %	0·0 %	2·1 %	1·5 %

Hair Colour of Various Comparable Populations.

Colour	Jacobs' Adult Jews		Galician Adult Jews		German Jewish Boys		Alien Jewish Boys		Gentile Polish Adults	
Black	35·5 %	78·3 %	13·1 %	76·8 %	11·7 %	66·9 %	3·9 %	51·7 %	5·5 %	53·8 %
Brown	42·8 %		63·7 %		55·2 %		47·8 %		48·3 %	
Fair	19·4 %	21·7 %	18·7 %	23·2 %	32·7 %	33·1 %	46·7 %	48·2 %	45·0 %	46·2 %
Red	2·3 %		4·5 %		0·4 %		1·5 %		1·2 %	

Our results were obtained with Fischer's glass silk hair scale which has a large series of numbered patterns, and we have grouped them above into eight classes of fairly definite character for comparison with those of other observers. It is very difficult to grasp what other observers who have not worked with standard scales really mean by their colours. Thus Jacobs' 35·5 % of black hair seems compatible with nothing else recorded, and must certainly include all the very dark brown hairs. For the final comparison it has not seemed possible to do more than divide the whole series into dark and light hair as given by the second percentages in each column. Under these circumstances Jacobs' adult Jews correspond reasonably with the Galician adult Jews. A large mass of material for the German Jewish boys is provided in Virchow's German pigmentation survey and is directly comparable with ours, both sets of boys being of school age. Now our boys were those on whom the special eye examination was made, and these were on the whole older than the general school population. Hence our boys are likely to be older than the German boys. Yet they are clearly a lighter haired population. Of course hair darkens with age, and if we were to suppose the German Jewish boys to become as dark as the Jewish adults in the first two columns in our table as they grow older, there is no reason to suppose that the alien Jewish boys (who start older) would catch them up*. Here again it seems possible that there is some infusion of foreign blood.

* We have worked out the correlation between hair colour and age for our alien Jewish boys who were submitted to the special eye examination. The following is the table:

Table X. *Hair Colour and Age in Alien Jewish Boys.*

Hair Colour	Age[1]							Totals
	7½–9	9–10	10–11	11–12	12–13	13–14	14–15½	
Black	1	—	1	3	4	8	2	19
Very Dark Brown	2	8	5	17	21·5	42	14	109·5
Dark Brown	5	9	18	23	34·5	34	15	138·5
Medium Brown	3	15	16	25	46	38	12	155
Light Brown	2	9	6	10	15	27	6	75
Slaty Brown	1	1	2	2	1	3	1	11
Red	—	—	—	—	5	2	1	8
Totals	14	42	48	80	127	154	51	516

[1] Central ages are: 8·39, 9·46, 10·46, 11·46, 12·46, 13·46, 14·47.

If we find the correlation ratio of age on hair shade we have: $\eta^2 = \cdot 014891$, but the mean η^2 for zero association is given by $\overline{\eta}^2 = \cdot 011{,}628 \pm \cdot 0064$. Thus there is in our material no really significant association of age with hair colour. The correlation coefficient, however, using means of hair colour groups was $r = \cdot 0887 \pm \cdot 0295$, which shows probably a slight relationship. It is largely the flaxen hairs which darken with age and these are absent. Thus if as in the text we suppose a substantial darkening with age, we are exaggerating what is likely to happen (for Diagram 1 see p. 20).

We cannot give data for Polish children of the corresponding age, but in the last column we give the proportions of hair colours in Polish adults. These must correspond to something of the order of 44 % of dark hair and 56 % of light hair in Polish children. An equally mixed population of German Jewish and Polish Gentile boys would give 55·5 % of dark and 44·5 % of light hair. Without laying any stress on such very crude numbers, we can say that some admixture of Polish blood would tend to account for the large percentage of light-haired boys in our alien Jewish population as compared with boys of the German Jewish population.

Eye Colour. Our records were made with the 16 glass eyes of Martin's scale, and again the difficulty which arises is to compare our results with those obtained by other authorities. We first endeavoured to classify Martin's 16 standard eyes in the usual Fourfold Scale and then in those of Virchow, Beddoe and Jacobs, which are purely verbal. It is open to a good deal of discussion how Martin's eyes should be distributed among the categories of the purely descriptive scales—which shows how comparatively little worth the latter possess. We have, however, given a good deal of thought to the subject, and made a number of trial divisions; there was none which gave any approximation to the results of Virchow and Beddoe but the schemes put before the reader in Table XI.

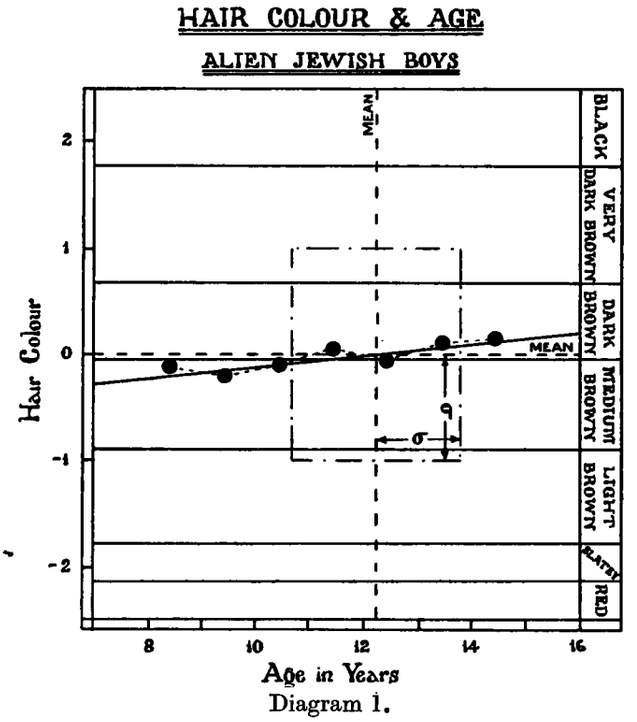

Diagram 1.

Table XI. *Percentages of Eye Colour in Alien Jewish Boys.*

Classified by	Dark Browns				Light Browns		Brown Hazels		Hazel Greys		Grey Blues		Blue Greys		Pure Blues	
Martin's Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0·0	1·0	6·0	28·3	10·0	8·5	8·9	8·9	1·3	3·7	3·7	6·2	3·7	6·2	3·0	0·6
Fourfold Scale	Dark Browns				Light Browns				Greys				Blues			
	35·3				36·3				14·9				13·5			
Virchow's Scale	Browns						Greys				Blues					
	53·8						22·8				23·4					
Beddoe & Jacobs' Scale	Dark						Neutral Eyes		Light Eyes							
	53·8						17·8		28·4							

The following table, Table XII, gives the comparative data. It appears from this that our alien Jewish boys are very close to Virchow's long series of German Jewish children; that they differ from Polish Jewish adults very slightly—and this seems to indicate that there is very little

change in eye colour between boys of school age (average 11·5 years) and adults. Both Polish and German Jewish children differ, however, from the Austrian Jewish children, among whom there is actually more than a moiety of grey and blue eyes.

Table XII. *Eye Colour.*

Comparison of Alien Jewish Boys with Other Series.

Group	Percentages of Eye Colour		
	Brown	Grey	Blue
German Jewish Children	52·5	28·8	18·7
Alien Jewish Children	53·8	22·8	23·4
Polish Jewish Adults	52·9	24·1	23·0
Austrian Jewish Children	45·9	30·6	23·5

Comparison of Alien Jewish Children with Adult Jews in General.

Group	Dark	Neutral	Light
Alien Jewish Children	53·8	17·8	28·4
Adult Jews (Beddoe)	63·5	13·0	23·5

If now we compare our alien Jewish children with Beddoe's observations on English Jews we find that there are 10 % fewer dark eyes. This difference seems much beyond any change with age*, and is, indeed, confirmed by the difference between Polish and English adult Jews. Without laying too great stress on returns based upon such different categories we are still inclined to believe that the eye colour confirms the conclusion to be drawn from hair colour and cephalic

* Our alien Jewish boys did show some slight change of eye colour with age; the elder boys indeed having the *lighter* coloured eyes. The table is as follows:

Table XIII. *Eye Colour and Age of Alien Jewish Boys.*

Eye Colour Martin's Scale	Age							Totals
	7½–9	9–10	10–11	11–12	12–13	13–14	14–15½	
2 and 3	2	9	5	3	4	11	2	36
4	5	12	13	25	32	46	14	147
5 and 6	2	6	6	19	26	21	15	95
7 and 8	2	3	8	13	29	29	8	92
9, 10, 11, 12	1	3	14	8	21	25	5	77
13 and 14	1	6	2	9	8	21	3	50
15 and 16	1	3	—	3	6	2	4	19
Totals	14	42	48	80	126	155	51	516

If we investigate the uncorrected correlation ratio η' of eye colour on age we find $\eta'^2 = \cdot 018{,}144$, while $\bar{\eta}^2$ the mean square correlation ratio for no association $= \cdot 011{,}628 \pm \cdot 0064$. The difference is not significant, and we cannot assert that eye colour changes with age. The correlation coefficient obtained from the mean ages to eye colour on a normal scale is $r = -\cdot 0884 \pm \cdot 0295$, which shows some small relationship of eye pigment to age, but indicates that *the lighter coloured eye is associated with the older boys* (see Diagram 2 on p. 22). This correlation is not marked and may be illustrated by the following percentages:

	Age		
	7·50–11	11–13	13–15·50
Darker Eyes: Martin 1–6	57·7	52·9	52·9
Lighter Eyes: „ 7–16	42·3	47·1.	47·1

This apparent lightening of the eye with age is probably something peculiar to our sample. But it is desirable to note it, that the reader may not lay stress on *darkening with age* as possibly accounting for the difference between Jewish adults in general and our alien Jewish children.

index, namely, that among the Jews of Eastern Europe, whether Polish or Austrian, there has been at some time a considerable infusion of a fairer race—probably of non-Semite origin. Such a race of marked brachycephaly and blondness is to be found in Great Russia in the marshes of the Rivers Beresina and Pripet, to the east of Poland, and well in the track of a race migrating from the Black Sea up the valley of the Dnieper.

Such an infusion of blood if it really exists is not definitely against the alien Jew as an immigrant, although an infusion of West European blood would have been a more suitable factor; neither Jews nor Slavs have hitherto shown in their historical records the ability to found a stable democratic community*. Our knowledge is, however, at present too meagre and popular appreciation of anthropological judgments on racial compatibilities and incompatibilities too slender for real weight to be laid on racial characteristics in the discussion of desirable immigrants. That such points will, however, be taken ultimately into consideration, as the sciences of anthropology and eugenics advance, can scarcely be doubted. At present we have hardly laid the foundations of a study of the mental and physical characters of human hybrids, although material for investigation is ample, and the study of it essential to any all-round knowledge of the probable effects of the world-wide migrations of to-day.

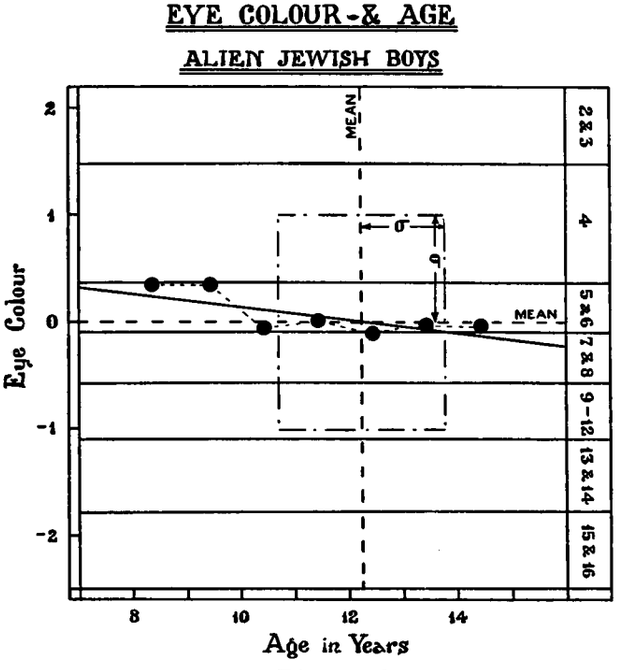

Diagram 2.

(*d*) *Association of Hair and Eye Colour in Alien Jewish Boys.* It may be of interest to note the association between hair and eye colour in our Jewish boys. The following is the Contingency Table:

Table XIV. *Association of Hair and Eye Colour in Jewish Boys.*

Hair Colour on Fischer's Scale	Eye Colour on Martin's Scale							Totals
	2 and 3	4	5 and 6	7 and 8	9, 10, 11, 12	13 and 14	15 and 16	
Black	2	6	9	2	1	—	—	20
Very Dark Brown	21·5	43	19	13	5	6	2	109 5
Dark Brown	6·5	43	26	24	26	11	2	138·5
Medium Brown	4	41	32	30	27	14	7	155
Light Brown	2	12	7	22	13	15	5	76
Slaty	—	1	1	—	3	3	3	11
Red	—	1	1	1	2	2	—	7
Totals	36	147	95	92	77	51	19	517

Worked by mean square contingency the uncorrected C_2' is ·4373, corrected for class index corrections assuming the marginal totals have normal distribution (more legitimate for the eye than the hair colour owing to the presence of slaty and red hairs) we have $C_2 = ·4653$.

* The racial origin of the present leaders of Soviet Russia still seems to be very obscure, but from the anthropological standpoint would form an undoubtedly interesting study.

Finding the means of the hair-colour arrays for given eye colour on the assumption of normality we have for the correlation coefficient corrected for class index $r = \cdot 4590$. The results are in reasonable accord with earlier ones in which no correction was made for grouping*. The reader may obtain from Diagram 3 some idea of the manner in which eye colour is related to hair colour. Slaty and Red and possibly Jet Black hairs may well stand out of the table order, for we have good reason for supposing that Slaty and Red hairs are not solely due to the ordinary melanine pigments, and further we have very few individuals. The Browns give a continuous series of points showing less and less eye pigment with less and less hair pigment. The means are obtained by treating the arrays as normal distributions and reducing all variation to groups Dark Brown and Medium Brown as unit of reference.

As some readers may appreciate the matter better by seeing the results in percentages of light and dark eyes to each hair colour we give them here.

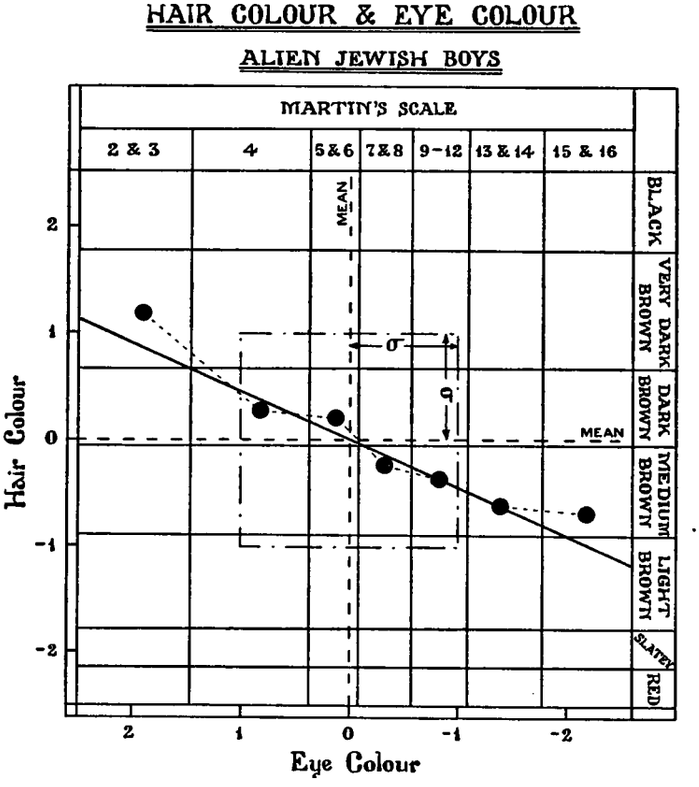

Diagram 3.

Percentages of Dark and Light Eyes to each Hair Shade.

	Hair Shade						
	Black	Very Dark Brown	Dark Brown	Medium Brown	Light Brown	Slaty	Red
Dark Eyes 1–6	85·0	76·3	54·6	49·7	27·6	18·2	28·6
Light Eyes 7–16	15·0	23·7	45·4	50·3	72·4	81·8	71·4

Were the results for Slaty and Red confirmed for larger numbers, we should be inclined to adopt the order Medium Brown, Red, Light Brown, Slaty, giving the Red more melanine pigment than Light Brown and Slaty. This is not incompatible with what we know as to pigment granules in red hair, although one very rare type of red hair (which may not occur with the Jews) has no pigment granules at all. Further microscopic examination of Slaty hair is desirable†.

An attempt was made to determine a relation between pigmentation and cephalic index. Supposing that there may have been an infusion of the blood of a light-haired race there might possibly be a linkage between cephalic index and either hair or eye colour. The tables are as follows:

* See *Biometrika*, Vol. III, pp. 459–62.

† See Nettleship, Usher and Pearson, *A Monograph on Albinism*, Part II, pp. 333–41. Cambridge University Press

Table XV. *Correlation of Cephalic Index with Hair and Eye Colour. Jewish Boys.*

Cephalic Index	Eye Colour — Martin's Scale Numbers							Totals	Hair Colour							Totals
	2 and 3	4	5 and 6	7 and 8	9, 10, 11, 12	13 and 14	15 and 16		Black	Very Dark Brown	Dark Brown	Medium Brown	Light Brown	Slaty	Red	
68·95–69·95	1	—	—	—	—	—	—	1	—	1	—	—	—	—	—	1
69·95–70·95	—	—	—	—	1	—	1	2	—	—	1	1	—	—	—	2
70·95–71·95	—	—	—	1	—	—	—	1	—	—	—	—	1	—	—	1
71·95–72·95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
72·95–73·95	—	—	—	—	1	—	—	1	—	—	—	1	—	—	—	1
73·95–74·95	—	1	2	—	—	—	—	3	1	1	—	1	—	—	—	3
74·95–75·95	—	2	1	—	—	1	1	5	—	—	1	2	2	—	—	5
75·95–76·95	3	4	3	—	3	—	—	13	1	5	2	3	2	—	—	13
76·95–77·95	2	5	3	1	3	6	1	21	—	2·5	6·5	6	2	1	3	21
77·95–78·95	5	5	6	6	4	5	1	32	1	6	6	16	2	1	—	32
78·95–79·95	3	12	6	6	4	5	1	37	2	11	9	12	3	—	—	37
79·95–80·95	—	15	13	10	8	7	2	55	1	6	16	22	7	3	—	55
80·95–81·95	8	10	7	10	9	6	1	51	6	10	10	16	8	1	—	51
81·95–82·95	2	17	8	9	5	6	2	49	1	12	15	10	7	2	2	49
82·95–83·95	2	21	12	9	10	4	3	61	4	10	14	19	13	—	1	61
83·95–84·95	1	16	7	18	8	4	3	57	—	13	18	11	11	3	1	57
84·95–85·95	3	14	10	9	6	2	—	44	1	12	15	10	6	—	—	44
85·95–86·95	2	10	8	9	6	1	1	37[1]	1	7	10	11	8	—	1	38
86·95–87·95	2	5	3	1	3	—	1	15	—	6	6	3	—	—	—	15
87·95–88·95	2	4	1	1	2	2	1	13	1	4	2	5	1	—	—	13
88·95–89·95	—	1	4	1	—	—	—	6	—	1	3	1	—	—	—	5[2]
89·95–90·95	—	3	—	—	3	1	—	7	—	1	1	4	1	—	—	7
90·95–91·95	—	1	2	1	1	—	—	5	—	—	2	1	2	—	—	5
Totals	36	146	96	92	77	50	19	516	20	108·5	137·5	155	76	11	8	516

[1] One Cephalic Index without Eye Colour.

[2] One Cephalic Index without Hair Colour.

We now determined the correlation ratios $\eta'_{i.e}$ and $\eta'_{i.h}$ or those of cephalic index (i) on eye (e) and hair (h) colours and also the values of the mean correlation ratios for no association. We found:

$$\eta'^2_{i.e} = \cdot 022{,}472 \qquad \bar{\eta}^2_{i.e} = \cdot 011{,}628 \pm \cdot 0064$$

$$\eta'^2_{i.h} = \cdot 028{,}869 \qquad \bar{\eta}^2_{i.h} = \cdot 011{,}628 \pm \cdot 0064$$

In both cases η'^2 is greater than $\bar{\eta}^2$, but in the first case by less than twice, in the second by less than thrice the probable error of $\bar{\eta}^2$. If notwithstanding this degree of insignificance we find the corrected η's, we have:

$$\eta_{i.h} = \cdot 1699 \pm \cdot 0288, \qquad \eta_{i.e} = \cdot 1078 \pm \cdot 0290.$$

To illustrate what these ratios stand for we give the following table of means of arrays of cephalic indices:

Table XVI. *Means of Cephalic Indices.*

Eye Colour		Hair Colour	
Dark Brown (1–3)	81·48	81·70	Black
Medium Brown (4)	82·84	82·69	Very Dark Brown
Light Brown (5–6)	82·70	82·94	Dark Brown
Hazel Brown (7–8)	82·96	82·17	Medium Brown
Greys (9–12)	82·72	82·86	Light Brown
Blue Greys (13–14)	81·45	81·54	Slaty
Pure Blues (15–16)	81·82	81·45	Red
Whole Population	82·55	82·54	Whole Population

This table indicates that while the correlation coefficients would be very small, there is a tendency for very ample or very slight pigmentation in either hair or eye to be accompanied

by a lessening of the brachycephaly. We can look at the fact the reverse way round; the following table gives the different percentages recorded and to be expected.

Table XVII. *Number of Eye Colours to Cephalic Index Values.*

Cephalic Index	Darker Eyes (1–6)	Lighter Eyes (7–16)	Darker Hair	Lighter Hair	Totals
Over 81·95	161	133	160	134	294
Under 81·95	117	105	106	116	222
Totals	278	238	266	250	516
Percentage Higher Brachycephaly	57·9	55·9	60·2	53·6	57·0
Percentage to be anticipated with no association	57·0 ± 2·00	57·0 ± 2·16	57·0 ± 2·05	57·0 ± 2·17	± 1·47

It will be seen that while no individual value can be looked on as significant, there is an accordance in the facts of both lighter eyes and lighter hairs having less percentages of the higher brachycephaly. There is taken all round just enough evidence to suggest that these Jews have intermingled with a lighter pigmented race of slightly less brachycephaly, i.e. that the Polish Jews in their transition from Asia Minor to Central Europe have to some extent interbred with the peoples of the upper Dnieper. The small intraracial correlation which is usually to be found between pigmentation and head-shape—while there is a considerable interracial correlation—suggests the independent inheritance of these characters, and the explanation of any intraracial correlation by the presence of hybridisation.

(iv) *Comparative Physique of Alien Jewish and Native Gentile Children.* In dealing with comparative statistics we have taken where possible three comparative classes: Children of London County Council Schools in (i) a good district, (ii) a poor district, and (iii) in London schools as a whole.

(*a*) *Stature.* Starting with stature we reach some noteworthy results. They are provided in Table XVIII. The data indicate that at each age both for boys and girls the stature of the Jews is less than that of the Gentiles of the Good District Schools, and greater than that of the Gentiles of the Poor District Schools, being in both cases practically identical with that of the average London schools.

Table XVIII. *Stature in Centimetres of Alien Jewish Children.*

	Boys							*Girls*						
	Age in Years[1]							Age in Years[1]						
	8	9	10	11	12	13	14	8	9	10	11	12	13	14
(i) Good District	118·5	123·7	130·9	134·7	137·9	144·1	149·5	118·8	123·9	129·9	132·9	139·2	144·3	150·8
(ii) Alien Jews	116·9	121·8	126·7	131·6	136·5	141·5	146·4	116·5	121·8	127·1	132·4	137·7	143·0	148·3
(iii) London Schools	117·1	122·3	127·3	131·6	135·7	140·7	145·0	117·4	121·6	126·2	131·2	137·2	143·0	147·6
(iv) Poor District	115·2	120·0	125·3	129·4	132·5	140·5	141·3	115·6	120·0	124·9	129·1	133·6	139·9	145·8

[1] Our ages throughout are central ages, i.e. 8 contains 7·5 to 8·5.

We may reasonably ask if this rather noteworthy result is peculiar to London. I take the following data (Table XIX) from the *Report* of the Medical Officer for Leeds, 1921.

It will be seen that the same phenomenon repeats itself—the Alien Jewish Children are not as tall as the children of the schools in a Good District, but taller than those from the schools of a Poor District. Practically they are identical with the average or ordinary district children as far as stature is concerned.

Table XIX. *Stature in Inches of Alien Jews and Native Gentiles (Leeds)*.*

	Age in Years at last birthday											
	3	4	5	6	7	8	9	10	11	12	13	14
Boys: (i) Good District	—	40·3	42·0	44·2	46·2	48·4	49·6	51·9	53·6	55·2	57·3	59·7
(ii) Ordinary District	38·1	39·2	40·8	42·4	45·3	47·2	48·7	50·6	53·0	53·9	55·1	58·9
(iii) Alien Jews	38·5	39·3	40·5	42·7	45·8	47·0	49·0	51·8	52·7	54·5	56·6	—
(iv) Poor District	34·9	38·6	39·8	41·7	44·3	46·2	47·3	49·9	52·3	53·3	54·3	57·0
Girls: (i) Good District	38·7	39·4	41·6	43·5	45·5	48·0	49·3	52·3	53·8	55·3	55·7	58·1
(ii) Ordinary District	33·6	38·9	40·3	42·6	44·8	46·8	48·1	49·9	53·1	54·5	55·7	59·5
(iii) Alien Jews	39·5	39·0	40·2	42·5	45·2	46·8	48·4	50·1	52·6	55·1	57·1	56·0
(iv) Poor District	36·6	38·0	39·6	41·2	43·7	45·6	47·0	49·6	51·6	53·5	55·1	55·2

To compare our Leeds and London Jewish children, we must reduce the latter to ages at last birthday and the former to centimetres. The results are exhibited in the following table, and indicate that there is very little difference in the Jewish statures owing to the difference of environmental conditions in London and Leeds.

Table XX. *Stature of Jewish Children in London and Leeds.*

	Boys						*Girls*					
	Age last birthday						Age last birthday					
	8	9	10	11	12	13	8	9	10	11	12	13
Leeds	119·4	124·5	131·6	133·9	138·4	143·8	118·9	122·9	127·3	133·6	140·0	145·0
London	119·5	124·3	129·0	133·8	138·6	143·4	118·9	124·1	129·4	134·7	140·0	143·4

There is possibly some slight advantage in the London environment in the case of the younger girls.

(*b*) *Weight.* Table XXI gives corresponding results for weight.

Table XXI. *Weight in Kilogrammes of Alien Jewish Children.*

	Boys							*Girls*						
	Age in Years[1]							Age in Years[1]						
	8	9	10	11	12	13	14	8	9	10	11	12	13	14
(i) Good District	22·5	25·7	27·4	29·8	31·9	35·5	40·4	21·2	24·3	27·4	28·8	33·1	36·0	40·6
(ii) Alien Jews	23·2	25·0	27·4	29·8	32·8	36·4	40·6	22·2	24·8	27·2	30·2	34·0	37·5	40·2
(iii) London Schools	22·2	24·5	26·7	28·6	30·9	34·2	37·1	21·9	23·7	26·0	28·4	31·8	35·6	37·9
(iv) Poor District	21·6	23·6	25·9	28·6	29·8	33·7	34·4	22·4	23·5	26·0	27·8	30·5	34·7	38·5

[1] Central Ages.

While in stature the alien Jewish children are just about that of ordinary London schools, in weight they surpass at all ages the average† and compare even slightly favourably with the weights of children from the good district schools. We ask if this is confirmed by the Leeds results.

* In a few instances in this table and in that for weight of Leeds children where irregularities occurred, we have taken the means of measurements given in the *Reports* for 1920 and 1921 in order to increase the numbers available.

† This statement is based on the data in the possession of the Laboratory, which is of somewhat *earlier* date. If we take the L.C.C. returns for 1914 (*Annual Report of Council*, Appendix VIII, p. x) we have the following:

	Ages (*Boys*)						
	8	9	10	11	12	13	14
Alien Jews	23·2	25·0	27·4	29·8	32·8	36·4	40·6
L.C.C. Elementary Schools	23·5	25·5	27·6	30·0	32·5	36·4	39·3

which indicates how little stress can be placed even on the difference in weight.

Table XXII. *Weight in lbs. of Alien Jews and Native Gentiles (Leeds).*

	Age in Years at last birthday											
	3	4	5	6	7	8	9	10	11	12	13	14
Boys: (i) Good District	—	37·7	40·2	44·2	48·2	53·1	56·5	62·2	66·8	73·0	79·6	86·0
(ii) Ordinary District	34·0	36·6	38·8	41·9	47·5	51·5	55·3	60·0	66·1	70·0	73·9	84·9
(iii) Alien Jews	39·5	37·2	39·8	43·8	48·9	53·7	58·8	61·6	68·5	74·8	83·7	—
(iv) Poor District	32·2	35·7	37·5	41·2	46·2	49·6	52·3	59·0	65·7	70·2	71·0	76·5
Girls: (i) Good District	34·0	36·0	38·8	42·3	45·6	51·0	53·9	62·1	65·9	73·8	78·6	83·5
(ii) Ordinary District	27·1	35·1	37·5	40·9	41·8	49·1	52·1	58·1	66·3	70·7	75·9	85·3
(iii) Alien Jews	35·2	36·9	37·9	42·2	41·6	51·7	55·1	63·6	70·9	78·4	84·9	84·0
(iv) Poor District	32·3	34·4	36·6	39·0	44·3	48·0	51·4	57·8	63·2	68·9	73·7	77·0

This table indicates that in Leeds as in London the alien Jewish are heavier than the average Gentile children, and are slightly superior at the later ages even to the children of the schools in the good districts. If we compare the weight of Jewish children with the weight of children in the manufacturing towns of England and Wales given in the British Association's Anthropometric Report of 1883, we find the Jewish boys are inferior in weight to the Gentile up to age 11 and the Jewish girls up to age 10; after these ages the Jewish children are distinctly heavier than the English children. This overtaking is probably due to the earlier oncoming of puberty in the oriental race.

It remains to compare the alien Jewish children of Leeds and London in weight; this involves the reduction of the Leeds weights to kilogrammes and of the ages of the London children from central ages to ages at last birthday. We find:

Table XXIII. *Weight of Jewish Children in London and Leeds.*

	Boys						*Girls*					
	Age last birthday						Age last birthday					
	8	9	10	11	12	13	8	9	10	11	12	13
Leeds	24·4	26·7	27·9	31·1	33·9	38·0	23·5	25·0	28·8	32·2	35·6	38·5
London	24·1	26·2	28·6	31·3	34·6	38·5	23·5	26·0	28·7	32·1	35·7	38·8

It is clear that the racial growth curves in weight are remarkably little influenced by environment. The point is one of some importance; for the equality in stature of the London alien Jewish and native Gentile population might by some be attributed to common environment. We see, however, that there is no such equality between the weights of the alien Jewish and native Gentile children. So that the former equality is hardly an environmental effect. Further, with such different environments as London and Leeds the alien Jewish children yet grow in weight in the same manner—and differently from the surrounding Gentiles. *Pro tanto* these results do not confirm Boas' statements that environment rapidly modifies the physical characters of the immigrant*.

* With a view of further testing Boas' statements the two cephalic indices 100 Breadth/Length and 100 Auricular Height/Length were dealt with. In the case of 344 boys born in England the mean first cephalic index was 82·165, in the case of 75 boys of whom the birthplace was not given the mean was 83·103 and in the case of 98 boys definitely born abroad 83·664. The corresponding standard deviations were 3·3599, 3·7500 and 3·6060, corresponding to probable errors of the above mean values of ·1222, ·2920 and ·2457 respectively. The difference between the first and last of these groups, $1{\cdot}4992 \pm {\cdot}2744$, is therefore five times its probable error and seems accordingly significant. The question at first suggested itself that it might be due to an age change. The boys born abroad were slightly older, their age being 12 years 4·8 months on the average as against 12 years 2·4 months of those born in England. We picked out a population of 98 of the older boys from those born in England but found their mean 82·176 for the first cephalic index, agreeing closely with the 82·165 of all the 344 boys born in England. This led us to work out the correlation between age and cephalic index for the alien Jews, and we found the coefficient of correlation $-{\cdot}0715 \pm {\cdot}0362$, i.e. less than double its

(*c*) It seems desirable to put on record the actual data for the relations between age and stature and weight.

(1) *Association of Stature and Age in Alien Jewish Children.* Table XXIV on p. 29 gives our data, while the graphs (Diagrams 4 and 5) indicate the change of stature in boys and girls. The following constants were found:

	Boys	*Girls*
Means, Age:	11·35 yrs.	11·04 yrs.
„ Stature:	133·34 cms.	132·60 cms.
Standard Deviations, Age:	1·9185 yrs.	2·0338 yrs.
„ Stature:	11·0406 cms.	12·4623 cms.
Correlation:	+·8549	+·8649

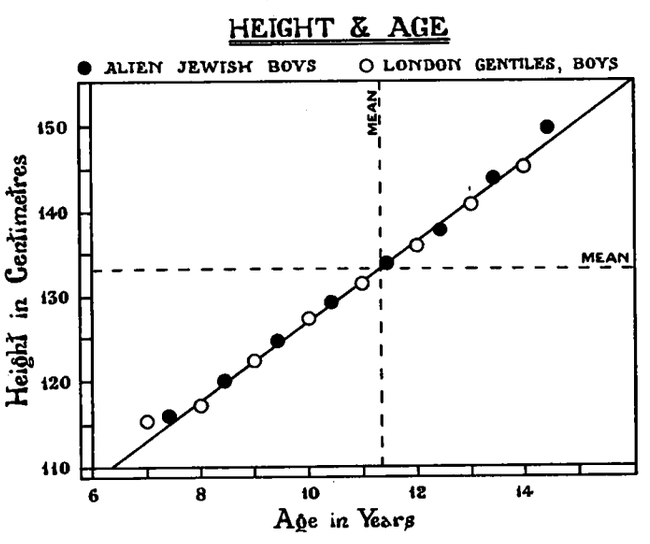

Diagram 4.

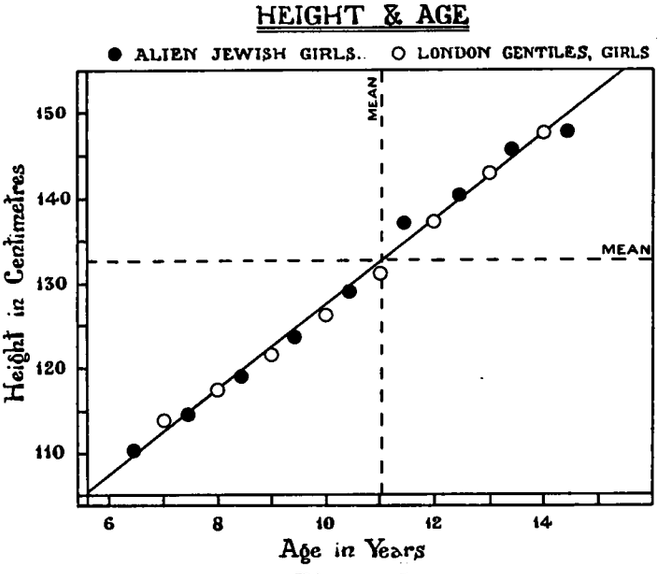

Diagram 5.

The diagrams indicate that the regression is adequately linear between 6 and 15 years of age. The equations expressing the stature (S) in cms. in terms of the age (A) in years are:

Boys: $S = 77{\cdot}4974 + 4{\cdot}9196A$. *Girls:* $S = 74{\cdot}0798 + 5{\cdot}2992A$.

These equations will provide the probable stature of a Jewish child at any assigned age. We have indicated by open circles the growth changes in stature of the native Gentile boys and girls of the ordinary elementary schools of London. It will be seen that the alien Jewish children are almost identical in their growth with the average London children.

probable error and therefore not actually significant; it would denote a *reduction* of ·1539 in cephalic index per annum, a change of no importance and in the wrong direction. The difference of 1·5 points in the first cephalic index between children born in England and abroad is much smaller than the changes noted by Boas, but in the same direction. We cannot, however, attribute it, like he does, to an immediate influence of environment. We treated the second cephalic index and found for 344 boys born in England the mean 71·779, for 75 boys birthplace not given 72·063, and for 98 boys born out of England 71·766. The standard deviations are 3·0214, 3·7444 and 3·0723 leading to the probable errors of the means of ·1099, ·2916 and ·2093 respectively. There is clearly no significant difference whatever in second cephalic index between the three groups. Why should environment change one and not the other of these indices? The suggestion we make is of the following kind. The Jewish values are: First cephalic index 82·5, Second cephalic index 71·8; the corresponding English values are 78·9 and 69·5. Hence any crossing would tend to reduce the first cephalic index more than the second. Is it possible for the group of children born in this country, that a few cases in which the alien has married a Gentile wife or an English Jewess with some Gentile blood may suffice to explain the slight fall in the first cephalic index?

Table XXIV. *Association of Stature and Age in Alien Jewish Children*.*

Central Statures	Central Ages, *Boys*																	Central Ages, *Girls*																
	6·7083	7·2083	7·7083	8·2083	8·7083	9·2083	9·7083	10·2083	10·7083	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	Totals	6·2083	6·7083	7·2083	7·7083	8·2083	8·7083	9·2083	9·7083	10·2083	10·7083	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	Totals
94·75	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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102·75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
104·75	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
106·75	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	3	1	4	4	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	11
108·75	—	1	—	4	—	1	—	—	—	—	—	—	—	—	—	—	—	6	—	5	3	3	2	2	—	—	—	—	—	—	—	—	—	—	—	—	15
110·75	1	—	2	3	2	—	—	—	—	—	—	—	—	—	—	—	—	8	1	1	6	7	4	1	—	—	—	—	—	—	—	—	—	—	—	—	20
112·75	—	2	3	5	—	1	—	—	—	—	—	—	—	—	—	—	—	11	—	6	7	5	5	4	1	2	—	—	—	—	—	—	—	—	—	—	30
114·75	—	4	5	3	4	2	1	—	—	—	—	—	—	—	—	—	—	19	—	2	5	3	14	11	4	4	—	—	—	—	—	—	—	—	—	—	43
116·75	—	2	10	7	8	2	2	1	—	—	—	—	—	—	—	—	—	32	—	1	3	4	6	9	4	—	1	—	—	—	—	—	—	—	—	—	28
118·75	—	4	5	8	9	7	3	3	2	1	—	—	—	—	—	—	—	42	—	—	2	5	12	11	2	4	4	1	1	—	—	—	—	—	—	—	42
120·75	1	1	2	6	6	4	2	—	1	—	—	—	—	—	—	—	—	23	—	—	2	5	9	12	9	6	4	5	3	1	—	1	—	—	—	—	57
122·75	—	3	2	5	12	3	6	3	1	1	—	2	1	—	—	—	—	39	—	—	1	2	5	7	5	7	4	4	3	1	—	2	—	—	—	—	41
124·75	—	—	—	3	11	4	5	7	4	5	—	4	1	—	—	—	—	44	—	—	—	1	3	9	3	5	6	8	—	4	1	—	—	—	—	—	40
126·75	—	—	—	—	3	5	4	4	9	7	1	7	2	1	1	—	—	44	—	—	—	1	2	2	8	4	8	6	6	4	5	1	1	—	—	—	48
128·75	—	—	—	2	4	5	8	8	4	8	1	16	4	—	—	—	—	60	—	—	—	—	1	1	3	3	6	4	2	6	5	5	—	—	—	—	36
130·75	—	—	—	—	1	2	1	10	5	8	3	22	4	2	—	—	—	58	—	—	—	—	—	3	1	2	10	8	10	6	8	8	1	—	—	—	57
132·75	—	—	—	—	—	1	5	3	8	4	4	22	17	2	2	—	—	68	—	—	—	—	1	—	2	5	5	10	2	5	8	8	4	1	—	—	51
134·75	—	—	—	—	—	1	2	1	4	9	11	10	10	6	5	—	—	59	—	—	—	—	—	1	—	2	3	5	8	8	16	8	2	4	—	—	57
136·75	—	—	—	—	1	1	—	1	3	4	6	24	20	7	2	1	—	70	—	—	—	—	—	—	—	2	—	6	3	8	15	11	4	3	2	—	54
138·75	—	—	—	—	1	—	—	1	1	3	2	17	16	8	6	1	—	56	—	—	—	—	—	—	—	1	3	3	7	7	18	12	3	5	—	—	59
140·75	—	—	—	—	—	—	—	1	1	3	4	17	14	12	4	1	1	58	—	—	—	—	—	—	—	—	1	1	—	10	16	12	10	9	1	—	60
142·75	—	—	—	—	—	—	—	—	—	1	3	8	17	13	6	1	1	50	—	—	—	—	1	—	—	—	—	1	2	9	12	13	10	3	1	—	52
144·75	—	—	—	—	—	—	—	—	—	2	1	11	16	10	5	7	2	54	—	—	—	—	—	—	—	—	—	—	1	5	13	19	8	8	3	—	57
146·75	—	—	—	—	—	—	—	—	—	1	—	2	9	6	4	3	—	25	—	—	—	—	—	—	—	—	—	—	1	2	10	11	7	13	4	—	48
148·75	—	—	—	—	—	—	—	1	—	—	1	6	2	6	4	1	—	21	—	—	—	—	—	—	—	—	—	—	—	—	4	15	12	9	2	—	42
150·75	—	—	—	—	—	—	—	—	—	—	—	3	5	2	5	1	—	16	—	—	—	—	—	—	—	—	—	—	—	2	4	9	8	9	3	—	35
152·75	—	—	—	—	—	—	—	—	—	—	—	1	3	3	4	4	2	17	—	—	—	—	—	—	—	—	—	—	—	1	3	4	6	6	—	—	20
154·75	—	—	—	—	—	—	—	—	—	—	—	1	2	—	5	3	—	11	—	—	—	—	—	—	—	—	—	—	—	—	—	4	2	3	1	1	11
156·75	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	2	—	6	—	—	—	—	—	—	—	—	—	—	—	1	—	1	2	—	1	—	5
158·75	—	—	—	—	—	—	—	—	—	—	—	—	—	1	3	—	1	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	1	—	4
160·75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	2
162·75	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
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168·75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
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172·75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	3	19	31	47	62	39	39	44	43	57	37	173	143	82	59	26	9	913	2	20	33	36	67	73	42	47	55	62	49	80	138	145	83	76	19	1	1028

(2) *Association of Weight and Age in Alien Jewish Children.* Table XXV on p. 30 gives the children's weights for each age.

It will be seen that the correlation coefficients and correlation ratios are fairly close together, but an inspection of Diagrams 6 and 7 indicates that the growth of weight with age is not expressed by a straight line.

We have accordingly fitted them with cubics. The corresponding formulae for weight W (in kilogrammes) in terms of age A (in years) are:

$$\textit{Boys: } W = -6{\cdot}6606 + 7{\cdot}1130A - {\cdot}6394A^2 + {\cdot}0266A^3,$$
$$\textit{Girls: } W = 41{\cdot}3501 - 8{\cdot}5432A + {\cdot}9820A^2 - {\cdot}0268A^3.$$

Our diagrams indicate by open circles the weight curves for average London schools of our Table XXI. These diagrams may be useful for the determination rapidly of average weight in the case of any Jewish child of the poorer class.

* Central Age, 6·7083 years, denotes the group of children from 6 years 5·5 months to 6 years 11·5 months, i.e. 3 months on either side of 6·7083 years. Central Stature 120·75 denotes all the statures between 119·75 and 121·75 cms.

Table XXV. *Weights for each Age of Alien Jewish Children.*

Weights in kilogrammes	*Boys'* Ages									Totals	*Girls'* Ages									Totals
	6 yrs. 5·5 m.– 6 yrs. 11·5 m.	6 yrs. 11·5 m.– 7 yrs. 11·5 m.	7 yrs. 11·5 m.– 8 yrs. 11·5 m.	8 yrs. 11·5 m.– 9 yrs. 11·5 m.	9 yrs. 11·5 m.– 10 yrs. 11·5 m.	10 yrs. 11·5 m.– 11 yrs. 11·5 m.	11 yrs. 11·5 m.– 12 yrs. 11·5 m.	12 yrs. 11·5 m.– 13 yrs. 11·5 m.	13 yrs. 11·5 m.– 14 yrs. 11·5 m.		5 yrs. 11·5 m.– 6 yrs. 11·5 m.	6 yrs. 11·5 m.– 7 yrs. 11·5 m.	7 yrs. 11·5 m.– 8 yrs. 11·5 m.	8 yrs. 11·5 m.– 9 yrs. 11·5 m.	9 yrs. 11·5 m.– 10 yrs. 11·5 m.	10 yrs. 11·5 m.– 11 yrs. 11·5 m.	11 yrs. 11·5 m.– 12 yrs. 11·5 m.	12 yrs. 11·5 m.– 13 yrs. 11·5 m.	13 yrs. 11·5 m.– 14 yrs. 11·5 m.	
12·05–13·05	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
13·05–15·05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15·05–17·05	—	1	—	—	—	—	—	—	—	1	3	1	—	—	—	1	—	—	—	5
17·05–19·05	—	2	8	—	—	—	—	—	—	10	8	18	7	1	—	—	—	—	—	34
19·05–21·05	1	10	12	3	1	—	—	—	—	27	7	21	30	3	—	—	—	—	—	61
21·05–23·05	—	22	21	8	4	1	—	—	—	56	1	10	34	16	8	2	—	—	—	71
23·05–25·05	1	11	31	19	10	1	3	—	—	76	3	12	36	17	17	6	5	1	—	97
25·05–27·05	—	4	24	20	17	12	13	2	—	92	—	6	19	26	29	17	9	—	—	106
27·05–29·05	—	—	10	17	20	19	23	1	1	91	—	1	9	11	18	21	22	7	—	89
29·05–31·05	—	—	2	8	17	15	52	5	1	100	—	—	4	10	21	11	24	5	1	76
31·05–33·05	—	—	—	2	10	25	62	13	—	112	—	—	—	3	12	22	42	12	4	95
33·05–35·05	—	—	1	1	6	12	55	30	2	107	—	—	1	1	6	20	38	13	1	80
35·05–37·05	—	—	—	—	1	3	35	25	3	67	—	—	1	1	2	12	40	23	—	79
37·05–39·05	—	—	—	—	—	3	17	16	6	42	—	—	—	—	—	4	30	26	5	65
39·05–41·05	—	—	—	—	1	1	20	10	5	37	—	—	—	—	3	9	28	17	2	59
41·05–43·05	—	—	—	—	—	1	17	19	3	40	—	—	—	—	1	—	17	14	1	33
43·05–45·05	—	—	—	—	—	—	8	4	2	14	—	—	1	1	—	1	9	16	—	28
45·05–47·05	—	—	—	—	—	1	3	6	3	13	—	—	—	—	—	2	9	11	1	23
47·05–49·05	—	—	—	—	—	—	2	4	1	7	—	—	—	—	—	1	2	6	1	10
49·05–51·05	—	—	—	—	—	—	1	4	2	7	—	—	—	—	—	1	5	2	2	10
51·05–53·05	—	—	—	—	—	—	3	1	1	5	—	—	—	—	—	—	3	3	—	6
53·05–55·05	—	—	—	—	—	—	1	1	2	4	—	—	—	—	—	—	1	2	—	3
55·05–57·05	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	1	—	1	2
57·05–59·05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
59·05–61·05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
61·05–63·05	—	—	—	—	—	—	1	—	1	2	—	—	—	—	—	—	—	1	—	1
63·05–65·05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
73·05–75·05	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—
Totals	3	50	109	78	87	94	316	141	35	913	22	69	142	90	117	130	285	159	20	1034

		Boys	*Girls*
Mean Weights:		31·55 kilogs.	31·13 kilogs.
Mean Ages:		11·37 yrs.	11·03 yrs.
Standard Deviations	Weights:	7·2322 kilogs.	8·0268 kilogs.
	Ages:	1·9163 yrs.	2·0229 yrs.
Correlations:		$r = \cdot7610 \pm \cdot0095$, $\eta_{w.a} = \cdot7580 \pm \cdot0095$[1],	$r = \cdot7763 \pm \cdot0083$. $\eta_{w.a} = \cdot7729 \pm \cdot0084$[1].

[1] That the values of η are less than r arises from the use of Sheppard's corrections in the S.D.

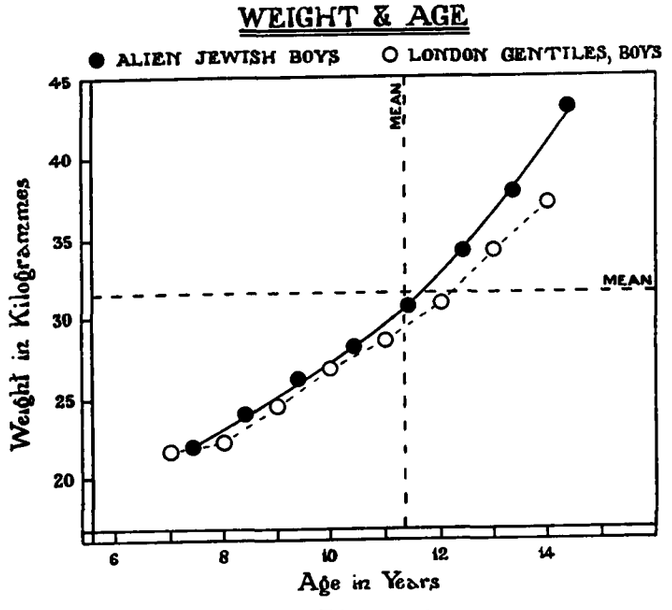

Diagram 6.

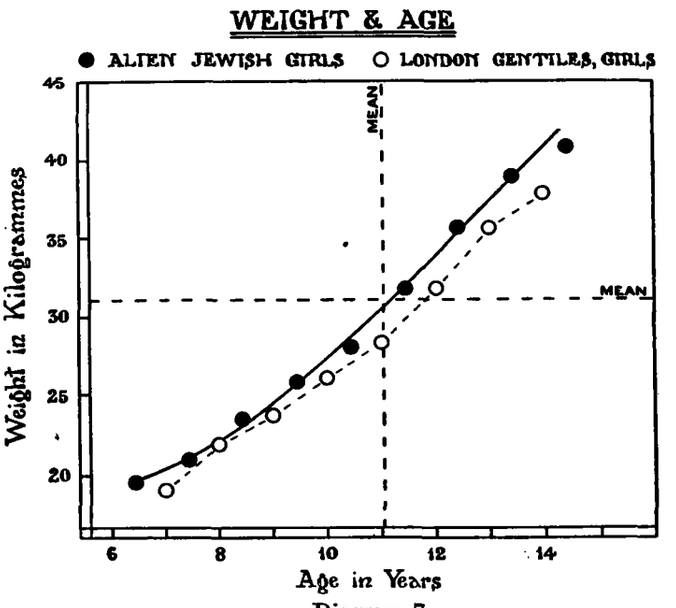

Diagram 7.

(*d*) *Nutrition.* There is considerable advantage in the discussion of this category. For the alien Jewish children being of the same stature as the native Gentile, but distinctly heavier than the average of the latter, nutrition may enable us to determine whether the weight is due to muscular development or is a manifestation of some racial tendency to develop fat. At the same time there is much diversity of opinion as to the signs of good and bad nutrition, and the definition of the categories used has been changed by the medical authorities within a few years. We do not feel it safe therefore to use more than a few broad categories: (i) Good Nutrition, (ii) Medium Nutrition, (iii) Bad Nutrition*. The following table gives comparative data:

Table XXVI. *General Nutrition of Alien Jewish and Native Gentile Children.*

Nutrition Percentages†.

Population	*Boys*			*Girls*		
	Good	Medium	Bad	Good	Medium	Bad
Gentiles, Good Districts	39 %	59 %	2 %	46 %	52 %	2 %
Alien Jewish	29	57	14	43	46	11
Gentiles, All Districts	31	63	6	32	57	11
Gentiles, Poor Districts	20	72	8	23	62	15

It is clear from this that the alien Jewish boys have worse nutrition than the general Gentile population, and more bad nutrition than the Gentiles of the poor districts. On the other hand, the girls have more good nutrition than the average Gentiles, but as much bad nutrition. To supplement this inquiry nutrition judged by pectoral reaction was considered.

Table XXVII. *Nutrition (Pectoral Reaction) of Alien Jewish Children.*

	Good Nutrition taken = Myotatic Irritability Absent	Medium Nutrition taken = Myotatic Irritability Present	Bad Nutrition taken = Myoidema
Boys	18·7 %	55·4 %	25·9 %
Girls	39·8	49·6	10·6

This table again shows the girls with far better nutrition than the boys. It emphasises the bad nutrition of the boys, and slightly reduces the good nutrition of the girls. The difference between boys and girls in the matter of nutrition is a very real one. We tested the probability P that the girls and boys could be samples of the same population and found $P = \cdot 000{,}003$! There are differences between the boys and girls of the Gentile groups, but they are not quite of the same character as in the case of the Jews. Taking the results for boys and girls as a whole, it is not possible to assert that the Jews have better nutrition than the Gentiles. It is possible that the difference between Jewish and Gentile girls is really due to the earlier age of puberty of the former. The vagueness of the determination of "General Nutrition" justifies any attempt to improve its determination, and accordingly we have thought it worth while to form tables indicating the relation of nutrition to other characters usually supposed to be allied with it. The characters we have at our disposal are (*a*) Nutrition in the above three classes; (*b*) Pectoral

* The well-nourished condition was defined by no sulci showing between ribs; the moderately nourished by well-marked intercostal sulci; and the badly nourished by depression between the ribs showing on front of chest above nipple-level.

† Decimal values are not given in this table as we had not the comparative values in more than whole numbers.

Reaction in the three classes defined in Table XXVII; (*c*) Percentage Haemoglobin; (*d*) Colour of Face, also in three classes: (1) = Florid, (2) = Medium, (3) = Pale or Very Pale. We first, however, investigated the influence of age on General Nutrition for 915 boys and 1035 girls. The results are displayed in Table XXVIII below.

Table XXVIII. *General Nutrition and Age.*

Age*	*Boys*			Totals	*Girls*			Totals
	Good	Medium	Bad		Good	Medium	Bad	
5 yrs. 11·5 m.—	—	—	—	—	—	1	1	2
6 yrs. 5·5 m.—	1	2	—	3	6	11	3	20
6 yrs. 11·5 m.—	5	9	5	19	5	25	3	33
7 yrs. 5·5 m.—	9	15	7	31	10	19	7	36
7 yrs. 11·5 m.—	9	28	10	47	23	30	15	68
8 yrs. 5·5 m.—	12	38	12	62	20	38	16	74
8 yrs. 11·5 m.—	12	21	6	39	20	17	5	42
9 yrs. 5·5 m.—	12	16	11	39	18	22	8	48
9 yrs. 11·5 m.—	10	30	4	44	24	25	6	55
10 yrs. 5·5 m.—	10	25	8	43	20	34	8	62
10 yrs. 11·5 m.—	28	22	7	57	25	19	6	50
11 yrs. 5·5 m.—	12	19	6	37	34	38	8	80
11 yrs. 11·5 m.—	41	111	22	174	64	61	14	139
12 yrs. 5·5 m.—	52	82	9	143	78	63	6	147
12 yrs. 11·5 m.—	30	39	13	82	47	32	4	83
13 yrs. 5·5 m.—	10	42	7	59	38	35	3	76
13 yrs. 11·5 m.—	13	11	3	27	8	9	2	19
14 yrs. 5·5 m.—	4	4	1	9	1	—	—	1
Totals	270	514	131	915	441	479	115	1035

These results are shown graphically in Diagrams 8 and 9 which indicate a steady if not very intense improvement of General Nutrition with growth.

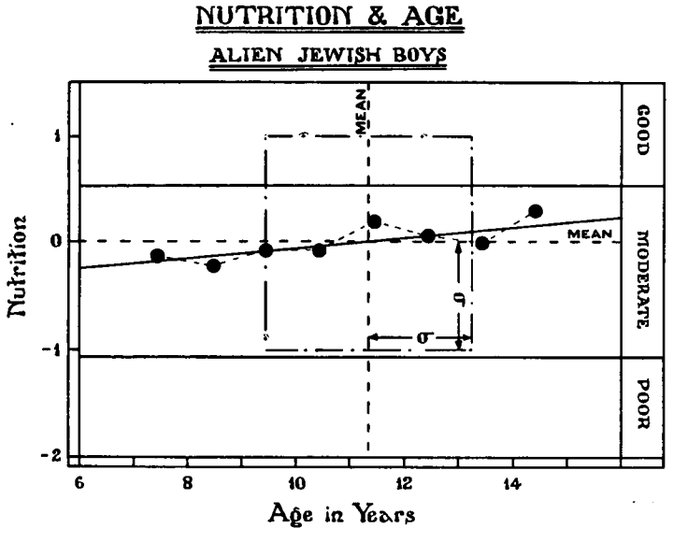

Diagram 8.

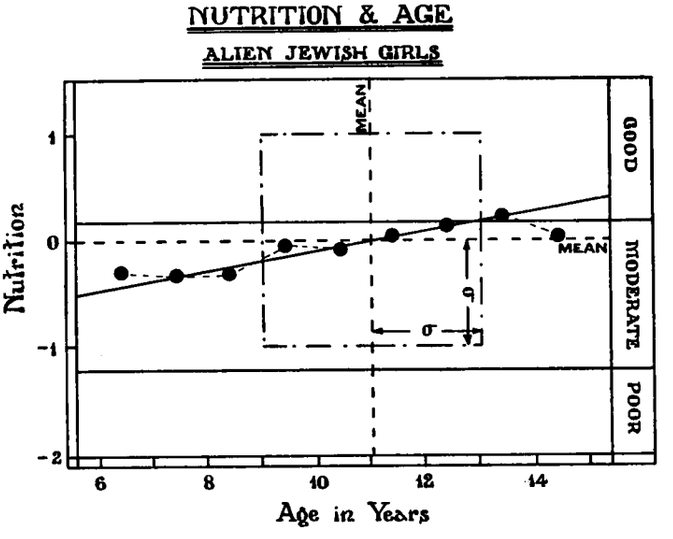

Diagram 9.

The following are the correlation constants:

Boys: $r = \cdot 0948$; $\eta_{N.a} = \cdot 1274$. *Girls:* $r = \cdot 1857$; $\eta_{N.a} = \cdot 1926$.

These values indicate that growth affects General Nutrition more in girls than boys. If N be

* The corresponding Central Ages are 6·2083, 6·7083, 7·2083, and so on.

nutrition measured from its mean and σ_N the standard deviation of nutrition, then the regression lines of nutrition (N) on age (A) in years are:

$$\textit{Boys: } N/\sigma_N = \cdot 0495\,(A - 11\cdot 375), \qquad \textit{Girls: } N/\sigma_N = \cdot 0918\,(A - 11\cdot 041).$$

It will be seen that growth produces not quite double the effect on nutrition in girls that it does in boys. The age influence—especially in boys—does not seem large enough to warrant correction for age. The maximum correction for boys is always less than one-fifth and for girls less than two-fifths of the standard deviation, or about one-eighth of the range of medium nutrition in boys and two-sevenths of the same in girls*.

Unfortunately the haemoglobin percentage was only taken by one of the medical officers and only for 424 boys and 284 girls, these children being confined to a certain number of entrants, ages 8 to 9 and again of leavers from 12 to 15. For the important ages 9 to 11 we have no data†. This paucity of data and the age gaps render the material very inadequate, but a few facts may be deduced from it. Table XXIX gives our data, and Diagram 10 shows the change of the haemoglobin percentage with growth.

Table XXIX. *Age and Percentage of Haemoglobin in Alien Jewish Children.*

Percentages Haemoglobin (Central)	*Boys'* Ages														Totals	*Girls'* Ages										Totals
	7·2083	7·7083	8·2083	8·7083	9·2083	.....	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	15·2083		8·2083	8·7083	.....	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	
50	—	—	—	—	—	.	—	—	—	2	—	—	—	—	—	2	—	—	.	—	—	—	1	—	—	—	—	1
55	—	—	—	—	—	.	—	—	—	—	1	—	—	—	—	1	—	—	.	—	—	—	—	—	—	—	—	—
60	—	—	1	—	—	.	—	—	2	1	1	1	1	—	—	7	—	1	.	—	—	—	—	—	5	—	—	6
65	—	—	—	—	—	.	—	—	2	—	—	4	—	—	—	6	—	—	.	—	—	—	—	1	1	2	—	4
70	—	—	—	—	—	.	—	—	5	5	4	7	3	2	—	26	1	1	.	—	1	2	1	2	3	—	—	11
75	—	—	—	5	—	.	—	1	9	7	3	2	—	—	—	27	6	3	.	1	—	6	2	—	2	2	—	22
80	—	1	9	8	—	.	2	7	55	41	21	14	7	—	—	165	12	14	.	2	6	22	26	13	9	—	—	104
85	—	—	1	5	1	.	—	4	35	26	12	6	6	2	—	98	3	6	.	—	4	15	16	6	11	3	—	64
90	1	—	3	7	—	.	—	2	24	21	3	4	3	1	—	69	4	3	.	1	2	16	17	4	10	2	—	59
95	—	—	1	—	—	.	—	1	4	3	3	2	3	—	—	17	—	—	.	—	—	—	3	—	2	3	—	8
100	—	—	—	—	—	.	—	—	1	4	—	—	1	—	—	6	—	—	.	—	1	1	—	—	—	2	1	5
Totals	1	1	15	25	1	.	2	15	137	110	48	40	24	5	—	424	26	28	.	4	14	62	66	26	43	14	1	284

There is very little influence of age until we come to puberty, when the curves for both boys and girls take a very significant dip. It is interesting to see that the pubescent dip so familiar in a number of anthropological characters reappears in the haemoglobin contents of the blood.

Taking the very incomplete table above and using the product-moment method, we find for the correlation coefficient of haemoglobin percentage and age:

$$\textit{Boys: } -\cdot 0707 \pm \cdot 0327, \qquad \textit{Girls: } +\cdot 1036 \pm \cdot 0398.$$

It may be doubted whether either of these is really significant, especially when we regard the difference of sign. There is probably a slight rise in haemoglobin content from 8 to 12, and then comes the pubescent dip, which more than counteracts it in boys, so that the total correlation is negative. This dip is followed by a smart rise between 14 and 15 years. From our present figures we find:

Percentage Haemoglobin.

	Mean	Standard Deviation	Coefficient of Variation
Boys	81·99 % ±·2405	7·3425 % ±·1701	8·9554 ±·1702
Girls	82·46 % ±·3035	7·5835 % ±·2146	9·1966 ±·2148

* Range of medium nutrition in boys = $1\cdot 6\sigma_N$ and in girls = $1\cdot 4\sigma_N$ nearly.

† Parental objection was raised to its measurement and it had to be discontinued.

While these results show that the girls have a greater haemoglobin percentage and a greater variability than the boys, no stress can really be laid on these differences (·47, ·24 and ·24) having regard to the probable errors until more numerous data are made available. The age correlations being small and doubtful, it did not seem desirable to attempt correction for age when correlating general nutrition with percentage haemoglobin. The following values show that there is not a continuous reduction of haemoglobin with poorer nutrition, but that there is a marked fall for bad nutrition.

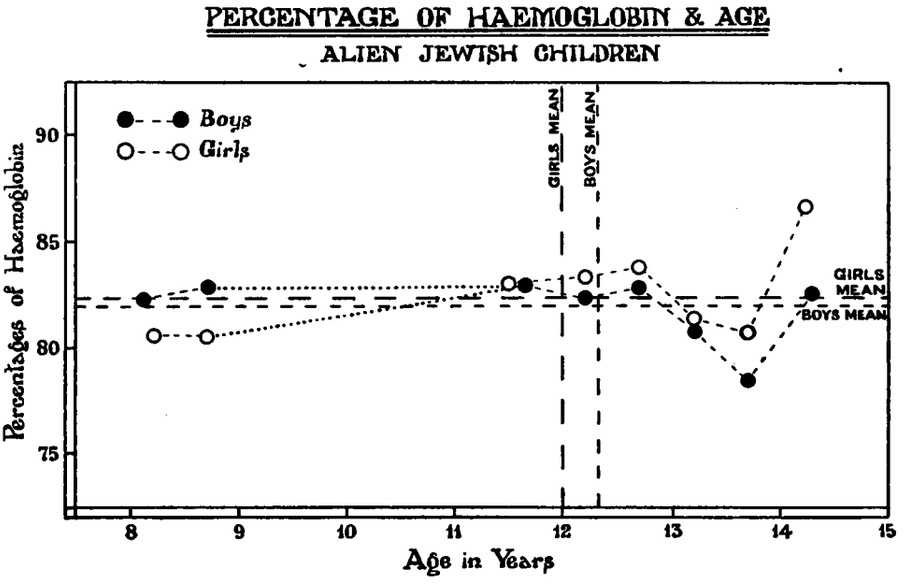

Diagram 10.

Table XXX. *General Nutrition and Percentage Haemoglobin.*

Percentage Haemoglobin	*Boys*			Totals	*Girls*			Totals
	Good	Medium	Bad		Good	Medium	Bad	
50	—	1	1	2	1	—	—	1
55	—	—	1	1	—	—	—	—
60	2	4	1	7	3	2	1	6
65	2	3	1	6	1	2	1	4
70	10	13	3	26	3	6	2	11
75	5	18	4	27	6	13	3	22
80	42	106	17	165	54	46	4	104
85	25	61	12	98	29	32	3	64
90	14	46	9	69	28	29	2	59
95	6	10	1	17	3	5	—	8
100	3	2	1	6	3	2	—	5
Totals	109	264	51	424	131	137	16	284

Means of Haemoglobin Percentages.

Nutrition	*Boys*	*Girls*
Good	82·02	82·79
Medium	82·20	82·70
Bad	80·88	77·81
General Population	81·99	82·46

Coefficient of Correlation,
Nutrition and Haemoglobin Percentage: $+\cdot0368 \pm \cdot0327$; $+\cdot1052 \pm \cdot0396$.

But owing to the fact that it is only the worst grade of nutrition that appears to affect the haemoglobin contents the coefficient of correlation cannot be considered an adequate measure of the relationship. The correlation ratios are:

Haemoglobin on Nutrition—*Boys:* $\cdot0649 \pm \cdot0326$, *Girls:* $\cdot1790 \pm \cdot0387$.

The nature of the relationship is indicated in Diagram 11. These figures indicate that

haemoglobin percentage, while a higher measure of general nutrition in girls than boys, would not be an adequate measure of nutrition.

General Nutrition and Colour of Face. While the general state of nutrition was determined by the presence or absence of sulci between the ribs, the colour of the face was to some extent used as a sort of check on this. It is therefore of interest to determine the degree of relationship between these two characters.

Table XXXI. *General Nutrition and Colour of Face.*

Boys

Colour of Face	Nutrition			Totals
	Good	Medium	Bad	
Florid	122	81	2	205
Medium	124	351	88	563
Pale and Very Pale	24	82	41	147
Totals	270	514	131	915
Girls				
Florid	245	80	5	330
Medium	161	325	65	551
Pale and Very Pale	33	72	44	149
Totals	439	477	114	1030

We place below this the similar table supposing the two characters were really independent with the numbers in brackets which have been transferred to each cell owing to the association of the two characters.

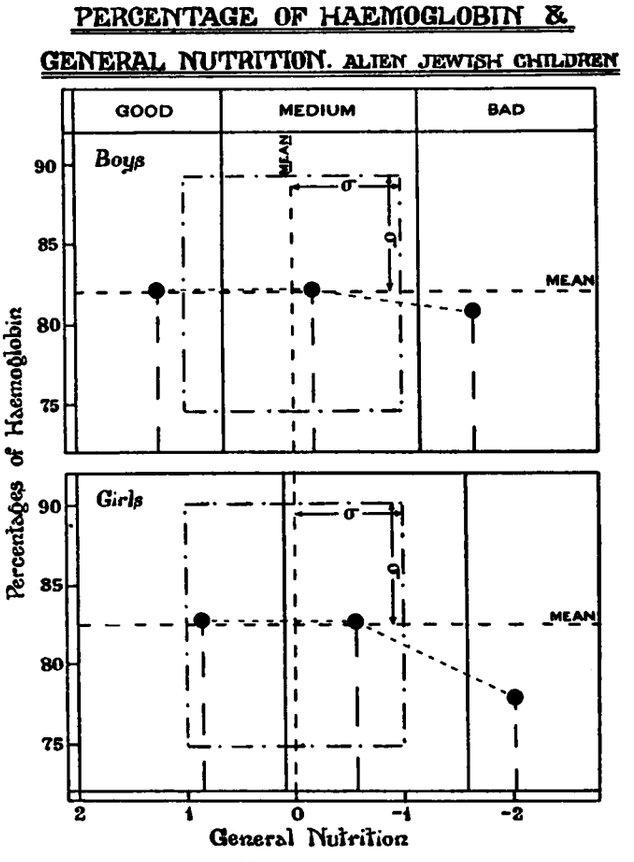

Diagram 11.

Table XXXII. *General Nutrition and Colour of Face (if independent).*

Colour of Face	*Boys* Nutrition			Totals	*Girls* Nutrition			Totals
	Good	Medium	Bad		Good	Medium	Bad	
Florid	60·5 (+61·5)	115·1 (−34·1)	29·4 (−27·4)	205	140·7 (+104·3)	152·8 (−72·8)	36·5 (−31·5)	330
Medium	166·1 (−42·1)	316·3 (+34·7)	80·6 (+7·4)	563	234·8 (−73·8)	255·2 (+69·8)	61·0 (+4·0)	551
Pale and Very Pale	43·4 (−19·4)	82·6 (−0·6)	21·0 (+20·0)	147	63·5 (−30·5)	69·0 (+3·0)	16·5 (+27·5)	149
Totals	270	514	131	915	439	477	114	1030

The bracketed numbers show how greatly the recorded frequencies differ from those which would arise if the characters were independent; the actual frequencies are heaped up along the diagonal corresponding to the association of good and of bad signs.

The tables have been worked out by mean squared contingency, corrected both ways for class index*. We find the correlation as measured by contingency coefficient (C_2):

Boys: ·4682, *Girls:* ·5578.

* Class index correlation for General Nutrition, *Boys:* ·8863; *Girls:* ·8789. Class index correlation for Colour of Face, *Boys:* ·8903; *Girls:* ·8905.

There is thus a very intimate relation, more intense in the case of girls, between pallor and general nutrition as judged by the flesh on the ribs.

We will now consider similar tables for General Nutrition and Pectoral Reaction.

Table XXXIII. *General Nutrition and Pectoral Reaction.*

Pectoral Myotatic Irritability	*Boys* Nutrition			Totals	*Girls* Nutrition			Totals
	Good	Medium	Bad		Good	Medium	Bad	
Absent	109	55	7	171	255	137	19	411
Present	126	317	64	507	173	277	63	513
Myoidema	35	142	60	237	12	66	32	110
Totals	270	514	131	915	440	480	114	1034[1]

[1] In the case of four girls no record of Colour of Face was provided.

Here again the following table for independence shows that the relation is quite substantial,

Table XXXIV. *General Nutrition and Pectoral Reaction (if independent).*

Pectoral Myotatic Reaction	*Boys* Nutrition			Totals	*Girls* Nutrition			Totals
	Good	Medium	Bad		Good	Medium	Bad	
Absent	50·5 (+58·5)	96·0 (−41·0)	24·5 (−17·5)	171	174·9 (+80·1)	190·8 (−53·8)	45·3 (−26·3)	411
Present	149·6 (−23·6)	284·8 (+32·2)	72·6 (−8·6)	507	218·3 (−45·3)	238·1 (+38·9)	56·6 (+6·4)	513
Myoidema	69·9 (−34·9)	133·2 (+8·8)	33·9 (+26·1)	237	46·8 (−34·8)	51·1 (+14·9)	12·1 (+19·9)	110
Totals	270	514	131	915	440	480	114	1034

the frequencies drawing in to the positively associated diagonal cells. The association as measured by the mean square contingency coefficient (C_2) is after correction for class indices*:

Boys: ·4668, *Girls:* ·4557.

Thus the association of Pectoral Reaction and General Nutrition is sensibly as great as that of Colour of Face and General Nutrition; it is somewhat less for girls than boys.

We will now proceed to consider the relation of these subsidiary nutritional signs among themselves. We deal first with Colour of Face and Pectoral Reaction.

Table XXXV. *Colour of Face and Pectoral Reaction.*

Pectoral Myotatic Reaction	*Boys* Colour of Face			Totals	*Girls* Colour of Face			Totals
	Florid	Medium	Pale and Very Pale		Florid	Medium	Pale and Very Pale	
Absent	75	79	17	171	208	174	28	410
Present	95	336	76	507	108	311	91	510
Myoidema	35	148	54	237	14	65	29	108
Totals	205	563	147	915	330	550	148	1028[1]

[1] In the cases of six girls with recorded Pectoral Reaction no Colour of Face was given.

* Class index correlation for Pectoral Reaction, *Boys:* ·8923; *Girls:* ·8794.

The independent probability table runs as follows:

Table XXXVI. *Colour of Face and Pectoral Reaction (if independent).*

Pectoral Myotatic Reaction	*Boys* Colour of Face			Totals	*Girls* Colour of Face			Totals
	Florid	Medium	Pale and Very Pale		Florid	Medium	Pale and Very Pale	
Absent	38·3 (+36·7)	105·2 (−26·2)	27·5 (−10·5)	171	131·6 (+76·4)	219·4 (−45·4)	59·0 (−31·0)	410
Present	113·6 (−18·6)	312·0 (+24·0)	81·4 (−5·4)	507	163·7 (−55·7)	272·8 (+38·2)	73·5 (+17·5)	510
Myoidema	53·1 (−18·1)	145·8 (+2·2)	38·1 (+15·9)	237	34·7 (−20·7)	57·8 (+7·2)	15·5 (+13·5)	108
Totals	205	563	147	915	330	550	148	1028

The relationship is again quite clear, although it is not so marked as in the case of either of these characters with General Nutrition. We have for the corrected mean square contingency coefficients:

Boys: ·3250, *Girls:* ·4179.

We must next consider the Percentage Haemoglobin and Colour of Face. Our data are:

Table XXXVII. *Colour of Face and Percentage Haemoglobin.*

Percentage Haemoglobin	*Boys* Colour of Face			Totals	*Girls* Colour of Face			Totals
	Florid	Medium	Pale and Very Pale		Florid	Medium	Pale and Very Pale	
50	—	—	2	2	—	1	—	1
55	—	1	—	1	—	—	—	—
60	—	6	1	7	1	5	—	6
65	—	4	2	6	—	1	3	4
70	6	15	5	26	1	7	3	11
75	3	18	6	27	—	12	10	22
80	35	88	42	165	26	55	23	104
85	25	59	14	98	13	34	17	64
90	7	48	14	69	14	31	14	59
95	3	10	4	17	1	5	2	8
100	2	3	1	6	1	3	1	5
Totals	81	252	91	424	57	154	73	284

Our haemoglobin data being few the results will not be so reliable as for the previous relationships, but the following table of means indicates that there is actually a slight increased percentage haemoglobin with increased face colour.

Colour of Face	Percentage Haemoglobin	
	Boys	*Girls*
Florid	82·53	83·68
Medium	82·14	82·21
Pale and Very Pale	81·10	82·05
Whole Population	81·99	82·46

The tri-serial method provides the correlation values:

Boys: ·0712 ± ·0326, *Girls:* ·0764 ± ·0398.

Neither value is more than twice its probable error, and both if significant would not be of service for prognosis. Diagram 12 indicates the somewhat slender relationship.

Lastly we may consider Pectoral Reaction and Percentage Haemoglobin.

Table XXXVIII. *Pectoral Reaction and Percentage Haemoglobin.*

Percentage Haemoglobin	*Boys* Pectoral Reaction			*Boys* Totals	*Girls* Pectoral Reaction			*Girls* Totals
	Absent	Present	Myoidema		Absent	Present	Myoidema	
50	—	2	—	2	1	—	—	1
55	—	1	—	1	—	—	—	—
60	1	5	1	7	1	5	—	6
65	1	4	1	6	2	2	—	4
70	3	20	3	26	—	10	1	11
75	1	16	10	27	1	13	8	22
80	19	100	46	165	20	64	20	104
85	8	60	30	98	9	47	8	64
90	4	41	24	69	8	35	16	59
95	2	9	6	17	3	3	2	8
100	1	2	3	6	2	2	1	5
Totals	40	260	124	424	47	181	56	284

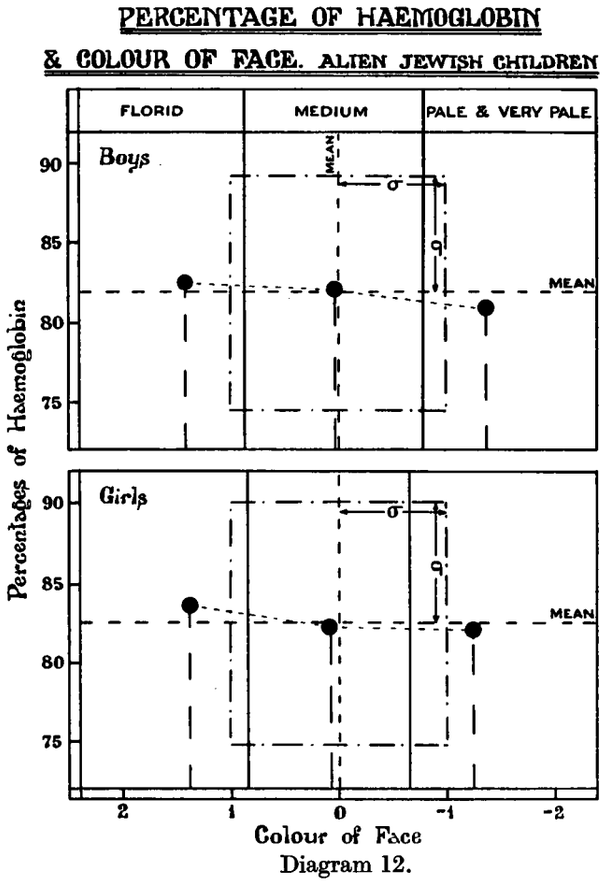

Diagram 12.

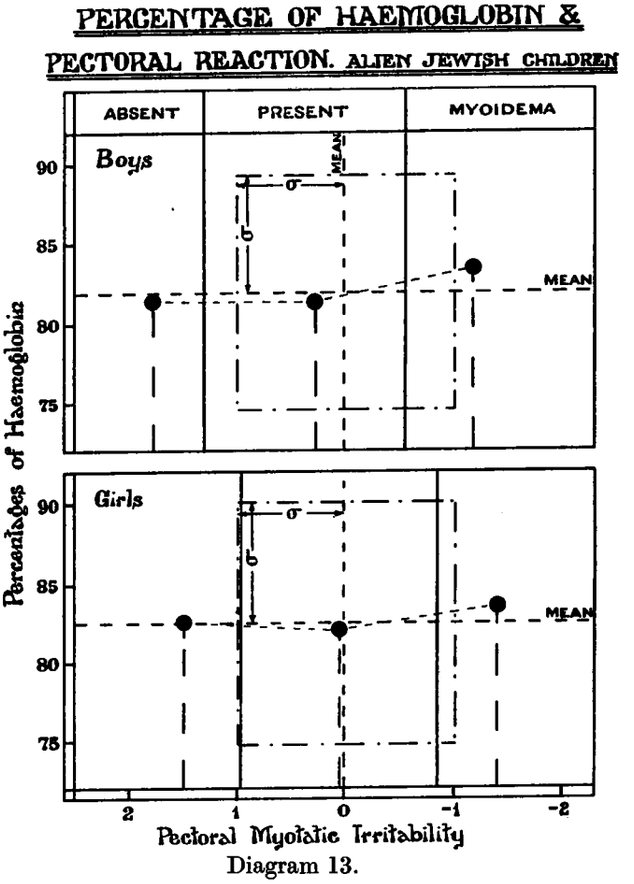

Diagram 13.

Taking the means of the various reaction arrays, we have:

Pectoral Reaction	Percentage Haemoglobin	
	Boys	*Girls*
Absent	81·50	82·66
Present	81·38	82·07
Myoidema	83·43	83·57
Whole Population	81·99	82·46

It will be seen that whether the reaction be absent or present makes little difference on the haemoglobin contents, but if the third category manifests itself, i.e. myoidema, there is for both boys and girls a very considerable *rise*, not fall, in percentage haemoglobin. This condition is indicated in Diagram 13.

It is clearly idle in this case to compute a coefficient of correlation*. We are brought face to face with the fact that while pectoral reaction is very considerably correlated with both general nutrition and colour of the face it does not measure in the same way haemoglobin contents. Bad nutrition is characterised (see our p. 34) by a lower percentage haemoglobin, but myoidema which also characterised bad nutrition by a higher percentage haemoglobin. It appears probable therefore that the low correlations of percentage haemoglobin with these nutritional measures may be due to the fact that certain forms of poor nutrition may be accompanied by a marked redundancy of haemoglobin†.

We have unfortunately no really comparable data for Gentile children with regard to either Pectoral Reaction or Haemoglobin Percentage. But it seemed worth while putting on record here the relations between these various characters, and the comparatively high correlations found between General Nutrition, Pectoral Reaction, and Colour of Face suggest that General Nutrition, as determined in this examination, is worthy of more credit than has been occasionally granted to it. The small influence of growth on nutrition or on percentage haemoglobin—apart from the pubescent dip in the latter case—is also a point of some importance.

We shall now pass to some of the ordinary defects noted in the usual school medical examination.

(*e*) *State of the Teeth.* Here again very much depends on the personal equation of the examiner. We have therefore not taken the masses of data which exist on this subject from various sources, but compared the record for the alien Jewish children with those provided by Dr Rock and Dr Hanson who made very careful examinations of non-selected districts. Table XXXIX gives the results.

Table XXXIX. *State of Teeth in Children (aged* 13–14).

	Boys			*Girls*		
	Perfect	1 or 2 Carious	3 or more Carious	Perfect	1 or 2 Carious	3 or more Carious
Alien Jews	30·0 %	45·2 %	24·8 % [1]	44·1 %	37·5 %	18·4 %
London Gentiles (Rock)	35·3	47·8	16·9	37·5	45·2	17·4
„ „ (Hanson)	33·9	67·1 %		45·0	55·0 %	

[1] It is not quite clear how Rock and Hanson dealt with absent teeth. If we include absent teeth in the case of the Jews we have *Boys:* 24·8 %, 42·5 %, 32·7 %, and *Girls:* 31·5 %, 46·0 % and 22·5 % respectively, which clearly makes matters worse. The three categories being now: Perfect; 1 or 2 Defective; 3 or more Defective.

It will be seen that our alien Jewish children in the case of the boys have fewer perfect dentures than the Gentile and lie between Rock's and Hanson's results in the case of the girls.

The *Report* of the School Medical Officer for Leeds in 1919 gives the following data for teeth:

Table XL. *Comparison of Teeth Defects in Alien Jewish and Native Gentile Children of both Sexes in Leeds.*

Gentiles:	Better Class Schools	Defects:	56·6 %
„	Suburban Schools	„	51·5
„	Average Schools	„	47·9
„	Poor Schools	„	45·1
Jews:	Jewish Schools	„	52·8

* The correlation ratios, which at any rate measure the degree of significance of the relationship, are:

$$Boys: \eta_{H.PR} = \cdot 1445 \pm \cdot 0321, \qquad Girls: \eta_{H.PR} = \cdot 0900 \pm \cdot 0397.$$

† The prevalence of heart trouble in these alien Jewish children (see our p. 44) may have some bearing on this matter.

The Jewish children have accordingly more dental defects than any class of school except the Better Class Schools. They are therefore certainly not better than the average Gentile children. But the results for the Gentiles seem to suggest that among the Leeds Gentile children the better the district the worse are the teeth.

If we disregard the question of the milk teeth we note that the number of defective teeth in boys decreases from age 8 to age 15. The same is true for girls. The drop for boys is from about 5 to 1·5 and for girls from about 4 to 1·6. This decrease in the number of defective teeth seems due to mistakes between permanent and milk teeth. Here the reader must note that we are dealing with defective not merely carious teeth. Defective teeth include absent teeth, probably removed because they were carious. It is therefore of importance to take as we have done children of approximately the same age*.

Table XLI gives the number of defective teeth at each age of the alien Jewish boys and girls. The constants deduced from this table are as follows:

	Boys	*Girls*
Means: Age	11·36 yrs.	11·03 yrs.
„ No. of Defective Teeth	2·7574	2·4586
Standard Deviations: Age	1·8769 yrs.	2·0494 yrs.
„ „ No. of Defective Teeth	2·6125	2·5255
Correlations:	$\eta_{t.a} = \cdot3469 \pm \cdot0197$	$\eta_{t.a} = \cdot3531 \pm \cdot0186$
	$r = -\cdot2811 \pm \cdot0206$	$r = -\cdot3288 \pm \cdot0187$

Both η's are significant and of moderate intensity.

Diagrams 14 and 15 show the nature of the decrease in the number of defective teeth with age.

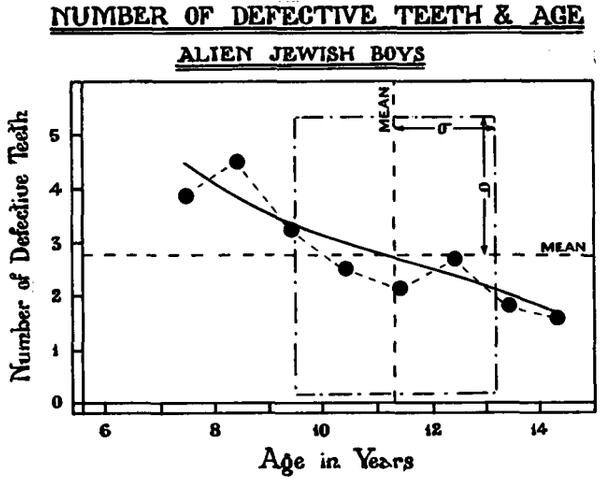

Diagram 14.

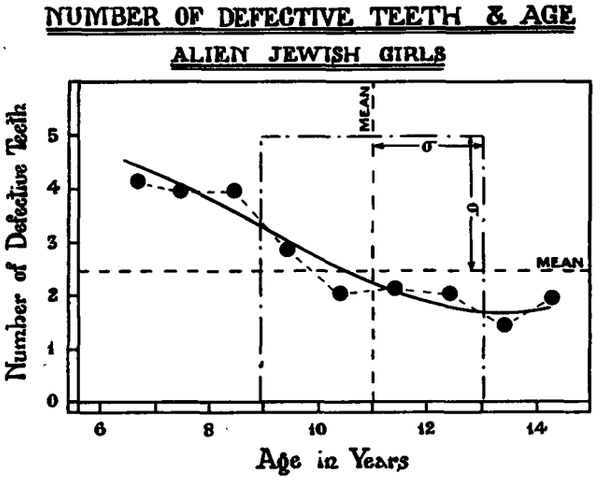

Diagram 15.

The curves have been fitted with regression cubics. If D_t be the number of defective teeth and A the age in years these cubics are:

$$\textit{Boys: } D_t = 20\cdot3942 - 3\cdot9809A + \cdot3159A^2 - \cdot0090A^3,$$
$$\textit{Girls: } D_t = 2\cdot5403 + 1\cdot3687A - \cdot2173A^2 + \cdot0082A^3.$$

The belief that the Jews have better teeth than our native population is therefore not substantiated by our data for these Jewish children.

* Some of the peculiarity of the Leeds returns may be due to the need of an age standardisation for the different schools.

Table XLI. *Number of Defective Teeth at each Age in Alien Jewish Children.*

Boys

Number of Teeth Affected	Central Ages in Years[1] 6·7083	7·2083	7·7083	8·2083	8·7083	9·2083	9·7083	10·2083	10·7083	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	Totals
0	—	5	7	6	3	7	9	8	10	15	5	41	32	23	12	11	1	195
1	—	4	—	1	9	4	2	4	7	13	10	24	32	20	17	6	2	155
2	1	2	3	8	9	6	10	10	8	13	10	20	17	17	16	7	1	158
3	—	3	1	5	3	3	4	9	7	7	2	26	26	7	8	1	2	114
4	1	2	4	8	7	6	3	6	5	3	6	19	12	6	4	2	1	95
5	1	1	3	1	10	4	3	2	2	—	3	12	6	3	1	—	1	53
6	—	—	3	5	6	5	3	3	1	3	1	16	6	2	—	—	—	54
7	—	—	4	3	1	1	2	1	—	—	—	5	1	1	—	—	1	20
8	—	2	2	5	5	1	2	1	2	1	—	4	5	—	2	—	—	32
9	—	—	1	—	4	2	—	—	—	1	—	1	2	—	1	—	—	12
10	—	—	1	1	3	—	1	—	—	—	—	1	1	—	—	—	—	8
11	—	—	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	4
12	—	—	1	1	—	—	—	—	—	1	—	—	2	—	—	—	—	5
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
16	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	3	19	31	47	60	39	39	44	42	57	37	171	142	79	61	27	9	907
Means of Arrays	3·89			4·50		3·22		2·49		2·13		2·68		1·80		1·58		2·76

Girls

Number of Teeth Affected	Central Ages in Years[1] 6·2083	6·7083	7·2083	7·7083	8·2083	8·7083	9·2083	9·7083	10·2083	10·7083	11·2083	11·7083	12·2083	12·7083	13·2083	13·7083	14·2083	14·7083	15·2083	Totals
0	—	2	6	6	9	8	7	12	18	20	12	26	40	34	37	24	3	—	—	264
1	—	1	2	2	6	10	8	6	8	14	10	14	27	30	17	13	5	—	—	173
2	1	2	3	5	9	10	8	5	9	6	5	19	27	35	15	21	5	—	—	185
3	—	1	5	2	7	10	5	7	7	7	7	8	17	12	5	5	3	1	1	110
4	—	8	4	5	9	8	4	9	4	6	3	3	9	11	4	4	—	—	—	91
5	—	2	5	3	—	2	2	2	4	2	5	4	6	7	1	3	—	—	—	48
6	1	2	2	4	9	10	2	1	2	3	2	2	6	3	1	1	—	—	—	51
7	—	—	2	5	9	7	—	3	1	2	—	—	2	3	—	1	1	—	—	36
8	—	—	1	3	1	2	1	—	1	—	1	1	2	1	—	2	—	—	—	16
9	—	1	1	—	4	3	—	—	—	—	1	—	1	1	—	—	—	—	—	12
10	—	—	—	—	2	1	3	—	—	—	—	1	—	—	—	—	—	—	—	7
11	—	—	1	—	—	—	—	1	—	—	1	—	—	1	—	—	—	—	—	4
12	—	1	—	—	—	—	—	1	1	—	1	—	—	—	—	—	—	—	—	4
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
17	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Totals	2	20	33	35	66	71	40	47	55	60	48	78	137	138	80	74	17	1	1	1003
Means of Arrays	4·14		3·97		3·97		2·85		2·04		2·13		2·02		1·42		1·95			2·46

[1] Central Age 6·7083 signifies all ages from 6 yrs. 5·5 mths. to 6 yrs. 11·5 mths.

(*f*) *State of the Glands.* The condition of the cervical glands was divided into the following five categories: (i) Glands cannot be felt, (ii) Can just be felt, (iii) Distinctly big, (iv) As big as hazel nuts, (v) Abscesses. We classed these as Healthy = (i), Slight swelling = (ii), Seriously enlarged = (iii)–(v). There resulted the following data:

Table XLII. *State of Glands in Alien Jewish and Native Gentile Children.*

Glands.

	Boys			*Girls*		
	Healthy	Slightly swollen	Seriously enlarged	Healthy	Slightly swollen	Seriously enlarged
Alien Jews	11 %	63 %	26 %	20 %	64 %	16 %
Average Gentiles	12	49	39	11	47	42

It will be seen that the Gentile boys and girls are closely in agreement, but that the Jewish girls are far healthier than the Jewish boys as far as the glands are concerned. The Jewish children of both sexes are distinctly freer from glandular trouble than the Gentile children. The result might suggest that the Jews were less liable to tuberculosis. Such a relative immunity might well be reached after centuries of ghetto life. This seems to be borne out *a priori* by the relative death-rates of Jews and Gentiles from the large towns of Europe*. The London returns given by Feldman for 1901–1906 give for the mortality per 10,000 from tuberculosis:

Jews: 13·3, Gentiles: 17·9.

But there are two points to be considered here. First: Are these really standardised death-rates? We should imagine the age distribution of the Jewish population very different from that of the Gentile†, and true standardisation would probably cause considerable changes. Secondly: It is not clear that the total Jewish population at risk has been at all adequately reached, or indeed can be reached‡. On the other hand, it would be unfair to our immigrants to compare results for *all* London, with results chiefly based on East End populations. Thus it does not seem as if the death-rates given above for *all* London could throw much light on the tuberculosis incidence in our Alien Jewish population. A closer measurement possibly would be the Jewish death-rates in Poland and Galicia. The nearest local tuberculosis death-rates for the Jewish population that we have seen are:

Cracow, 1896–1900: 20·5 per 10,000,
Lemberg, 1897–1902: 30·6 per 10,000,

which are probably in excess of that of the native population of East London. But we are not certain whether age distribution has been taken into consideration. Feldman in the paper cited quotes the Whitechapel Tuberculosis Dispensary, stating that there are 19 Jewish to 1 Gentile patient, while the deaths are about equal. Here again the age distribution would be important. It is quite possible also that the Jews are more anxious and visit the Dispensary with slighter

* W. M. Feldman, "Tuberculosis and the Jew" in *The Tuberculosis Yearbook and Sanatoria Annual*, Vol. I, 1913–14, pp. 48–54.

† Körösi states that in 1881 the proportion of Jews under 20 was 45 % and of Gentiles 34 % in Buda Pest.

‡ Feldman works from the data of the Jewish Burial Society, which is "said" to deal with about three-quarters of the Jewish deaths occurring in London, the cause of death, age, etc., being recorded in each case. He then supposes the general mortality rate in Jews to be at each age the same as that of the Gentiles of the *whole* of London. But since the whole of London has a much lower mortality rate than the districts inhabited by our Alien Jewish population, this increases the population at risk and gives a value much too low for the death-rate based on the observed mortality for a special disease like tuberculosis.

symptoms. As Feldman states that the bacillus cannot be found in the sputum until the case is far advanced in Jews, the diagnosis must always be very doubtful. Lastly the lower mortality may not be due to a lower incidence rate, but to what has been stated as a fact, that the disease runs a more chronic and less fatal course in Jews than Gentiles. A chronically affected population may be less efficient than one not so affected but having a higher death-rate. We do not think it is possible without far more accurate statistics than are at present available to ascertain the greater or less fitness of these immigrants with regard to tuberculosis immunity.

On the other hand, if we put aside the death-rate and consider the School Medical Officers' Reports we have the following data:

Table XLIII. *Tuberculosis in Alien Jewish and Native Gentile School Populations.*

	Boys			*Girls*		
	Entrants	8–9 yrs.	12–13 yrs.	Entrants	8–9 yrs.	12–13 yrs.
Gentiles, Average, All cases	0·60 %	0·62 %	0·74 %	0·52 %	0·62 %	0·68 %
Alien Jews, Active		1·62 %	2·75 %		1·37 %	2·74 %
„ Quiescent and Doubtful		1·13 %			1·37 %	

These statistics seem to indicate a greater prevalence of tuberculous disease among the alien Jews than among the average children of the London elementary schools. This may confirm Dr Feldman's view that the mortality from tuberculosis among the Jews is not a measure of its prevalency. At any rate the alien Jewish school population seems markedly worse than the average Gentile. Stepney is mentioned in the *L.C.C. Report for* 1914 as one of the four London boroughs with the highest phthisis age-corrected death-rate (17·5). Indeed it is only exceeded by Shoreditch and Finsbury, also largely Jewish quarters. The combined death-rate from phthisis in 1914 of these three districts was 20·0 per 10,000 or practically equal to the Jewish rate in Cracow.

(*g*) *Tonsils and Adenoids.* The categories here were: (i) Healthy, (ii) Enlarged, (iii) In need of operation. The percentages of these classes in the alien Jewish children are as follows:

Table XLIV. *Tonsils and Adenoids in Jewish Alien Children.*

	Healthy	Enlarged	Operation needful
Boys (914)	59·4	26·9	13·7
Girls (1039)	59·0	29·9	11·1

The girls are somewhat better in this respect than the boys. For comparative material we have only two categories: "Healthy" and "Enlarged or Present."

Table XLV. *Percentages of Tonsils and Adenoids in Jewish and Gentile Children.*

	Boys		*Girls*	
	Healthy	Enlarged or Present	Healthy	Enlarged or Present
(i) Good Districts	73·2	26·8	73·9	26·1
(ii) Alien Jews	59·4	40·6	59·0	41·0
(iii) All Districts	68·0	32·0	68·6	31·4
(iv) Poor Districts	58·8	41·2	58·9	41·1

This table shows that the alien Jewish children are worse than all Gentile London districts grouped, and practically on the same level as the Gentile children of the poor London districts. We must remind the reader that from our standpoint as Eugenists we demand that the immigrants

shall not be equal to the feebler children here, or to the average children here, but shall be *markedly superior to our average.*

(*h*) *Various Pathological States.* We now turn to various diseased and pathological conditions, diseases of the heart, eye, ear and lungs, in connection with which we may also note particulars as to anaemia, breathing and strabismus.

(1) *Heart Disease.* We compare our alien Jewish children with the general returns for the London elementary schools.

Table XLVI. *Heart Disease in Alien Jewish and Native Gentile Children.*

	Boys		*Girls*	
Alien Jewish Children, Functional	8·40 %		8·22 %	
,, ,, Organic	2·91		4·45	
,, ,, Combined	11·31		12·67	
Gentiles, Entrants, All cases	2·44	} 2·61 %	2·12	} 2·94 %
,, 8–9 yrs. ,,	2·64		2·99	
,, 12–13 yrs. ,,	2·75		3·70	

Of course there is great personal equation in the matter of estimating heart disease, but it is impossible to escape the conclusion that the alien Jewish children have seriously more heart trouble than the *average* Gentile children.

(2) *Disease of the Ear.* Our data were only divided into two classes: Healthy and Discharging*.

Table XLVII. *Disease of the Ear in Alien Jewish and Native Gentile Children.*

	Boys		*Girls*	
Alien Jewish Children, Diseased	4·36 %		3·08 %	
Gentiles, Entrants ,,	2·68	} 2·35 %	2·72	} 2·49 %
,, 8–9 yrs. ,,	1·96		2·24	
,, 12–13 yrs. ,,	2·41		2·51	

Again the statistics tell against the alien Jewish children. We cannot here as in some of the previous cases compare the alien Jews against the worst Gentiles; but such a comparison is not actually needful, if we accept the axiom that no immigrants ought to be admitted to a crowded country when they are not physically or mentally *above* the average native population.

(3) *Diseases of the Eye.* These include blepharitis, conjunctivitis, corneal opacities, etc. We note strabismus separately. The percentages of the separate diseases in 1914 appear to have been obtained for children of both sexes taken together in all the London elementary schools.

Age of scholars 12–13:	Blepharitis	1·19 %	} 3·34 %
	Conjunctivitis	0·35	
	Corneal Opacities	0·25	
	Other Diseases	0·34	
	Strabismus	1·21	

We can now compare percentages for Jews and average Gentiles.

Table XLVIII. *Eye Disease in Alien Jewish and Native Gentile Children*†.

Boys:	Alien Jews (Average Age, 11·37 yrs.),	General Eye Diseases	8·56 %	} 10·66 %
	,, ,,	Strabismus	2·10	
	Gentiles, Entrants, together			4·97
	,, 8–9 yrs. ,,			3·98
	,, 12–13 yrs. ,,			3·33
Girls:	Alien Jews (Average Age, 11·03 yrs.),	General Eye Diseases	6·15 %	} 8·20 %
	,, ,,	Strabismus	2·05	
	Gentiles, Entrants, together			4·83
	,, 8–9 yrs. ,,			4·10
	,, 12–13 yrs. ,,			3·35
Boys and Girls:	Gentiles, 12–13 yrs., Strabismus			1·21

* In the L.C.C. ordinary examinations the diseases of the ears are stated to be "mainly discharging ears," and other diseases would in the case of the Jewish children be included under this heading.

† The examination in London must be more thorough than in Leeds or the conditions of the eyes in Leeds better. Eye disease in general is given at 1·2 % (strabismus at 2·5 %), or without strabismus 1·2 % as against London's 2·1%. The Jews in Leeds have exactly the average amount of eye disease, i.e. 1·2 %.

There can be no doubt of the superiority in eye healthiness of the average Gentile over the alien Jewish child.

(*i*) *Keenness of Vision.* The full discussion of the sight of the alien Jewish children will be dealt with in a separate section; but to complete the round of the usual school inspection records we give here tables of keenness of vision in the alien Jewish children. We have already stated that it was not possible to get a complete study of the girls' sight. After about 30 to 40 girls had been tested, it was considered desirable to give up testing the girls. Thus in our special section on Sight we shall deal only with boys. The medical officers, however, took vision tests on both boys and girls for monocular vision only*, but this suffices to show how closely the results for girls approach those for boys.

Table XLIX gives the keenness of monocular vision in percentages. If we take the last two classes as marking bad vision, we see that boys and girls stand on a parity of about 15 %. But while the boys have 27·1 % of normal vision, the girls have only 18·7 %.

Now the only differences in training between the boys and girls lie in the length of time the boys give to Hebrew studies, and the length of time the girls give to sewing. We shall discuss something of this matter in our later section, but there seems no reason to suppose that sewing damages the eyes more than the study of Hebrew. It seems probable therefore that the sight difference is either a sexual characteristic, or the nervousness of the girls led to an underestimate of their keenness of vision†.

Table XLIX. *Monocular Vision in Alien Jewish Children.*

Vision	*Boys*	*Girls*
6/6	27·1 %	18·7 %
6/9	27·5	27·7
6/12	19·0	25·1
6/18	11·3	13·9
6/24	5·9	7·2
6/36 and worse	9·1	7·4

* The results of our special examination do not seem to indicate that ordinary school inspection for vision can be more than a fairly rough approximation, see later.

† The London County Council have a different manner of classifying keenness of vision, and we can compare our alien Jewish children with the average London children on their basis (*Annual Report, L.C.C.*, 1914, p. 90). Their Class I contains 6/6 in *both* eyes; Class II 6/9 in either or both eyes; Class III 6/12 or worse in either or both eyes. Their data are for children 8–9 yrs. and "Leavers," which are rather difficult categories for us to give comparable ages for.

Table L. *Percentages of Alien Jewish and Average London Gentile Children's Keenness of Vision.*

	Boys			*Girls*		
	Class I	Class II	Class III	Class I	Class II	Class III
Jewish Alien, age 12–13	30·7 %	20·1 %	49·2 %	19·5 %	22·0 %	58·5 %
L.C.C. "Leavers"	54·3	24·8	20·9	47·3	29·1	23·6

We see from this method of tabulating that the Gentile girls like the Jewish have worse sight than the boys. Further, if we compare Jewish and Gentile children of 8 to 9, we find a still more marked superiority of the Gentile. But this procedure is somewhat risky as the examination of children of ages 8 to 9 is often confined to those in which some eye defect is suspected.

In Leeds in 1919 the defects in vision reported were:

Gentile Schools				Jewish Schools
Better Class	Suburban	Ordinary	Poor	
32·4 %	32·8 %	37·6 %	38·9 %	44·9 %

which point in the same direction as our data.

We will now compare the results of our special examination for binocular vision with series of data for British boys. Table LI compares the vision percentages of alien Jewish boys with a long London schools series, and with two series from Scotland, namely from Edinburgh and Glasgow. The former is of special interest as it is a slum or bad environment series. We see that the alien Jewish boys have much worse vision than the British boys, and while the visions of boys and girls are about the same in this we conclude that the Jewish girls will be markedly worse than the English girls.

Table LI. *Binocular Vision Percentages in Alien Jewish and Native Gentile Boys.*

Vision	Alien Jewish Boys	Edinburgh Boys	London Boys	Glasgow Boys
6/6	68·9 %	72·3 %	76·8 %	77·7 %
6/9	14·3	10·7	12·5	13·0
6/12	5·8	4·2	4·6	2·2
6/18	4·0	9·4	3·5	3·3
6/24	2·5	1·6	1·2	1·1
6/36 and worse	4·5	1·8	1·4	2·7

In our special section on sight we shall bring much evidence to indicate that this defect in sight is a racial characteristic and not produced by the poverty and bad home environment of many of the immigrant families. We have run through the records of the chief physical characteristics of this alien Jewish population, and we have seen that with one or two exceptions, stature, weight and glands, it is not only unequal to the average Gentile population but is inferior to it. Any wise immigration law would admit into a crowded country only those who are physically as well as mentally *well above* the average natives. This investigation of the Polish and Russian Jewish children does not lead us to consider them even the equals physically of the native Gentile children. We have yet, however, to study two important factors of immigrant fitness, Habits and Intelligence.

(v) *Habits of Alien Jewish and Native Gentile Children.*

(*a*) *Cleanliness of Hair and Body.* Our categories here were as follows:

Hair.

1. Very clean and tidy.
2. Clean on whole, somewhat untidy.
3. Dirty and untidy, scurf, nits, etc.
4. Hair matted together, verminous, etc.

Body.

1. Very clean.
2. Dirty nails, patches of dirt here and there.
3. Very dirty, extensive fleabites, etc.
4. Verminous, etc.

The following table gives the combined results:

Table LII.

Body	*Boys* Hair 1	2	3	4	Totals	*Girls* Hair 1	2	3	4	Totals
1	50	15	2	—	67	48	90	46	3	187
2	222	304	70	11	607	33	249	274	36	592
3	56	108	42	4	210	8	91	130	18	247
4	4	16	5	6	31	—	2	3	4	9
Totals	332	443	119	21	915	89	432	453	61	1035

From this we obtain the following percentages:

	Boys Clean and tidy	Clean, but untidy, patches of dirt	Dirty, nits, fleas	Verminous	*Girls* Clean and tidy	Clean, but untidy, patches of dirt	Dirty, nits, fleas	Verminous
Hair	36·3 %	48·4 %	13·0 %	2·3 %	8·6 %	41·7 %	43·8 %	5·9 %
Body	7·3	66·3	23·0	3·4	18·1	57·2	23·9	0·8

It must be admitted that these results are very unsatisfactory, especially when it is borne in mind that notices of the medical examination are sent to parents.

To test whether uncleanliness and untidiness of hair and body are related, fourfold tables were made as follows:

Table LIII. *Correlation of Body and Hair Uncleanliness.*

	Boys			*Girls*		
Body	Hair		Totals	Hair		Totals
	Clean (1 + 2)	Dirty (3 + 4)		Clean (1 + 2)	Dirty (3 + 4)	
Clean (1 + 2)	591	83	674	420	359	779
Dirty (3 + 4)	184	57	241	101	155	256
Totals	775	140	915	521	514	1035

The resulting tetrachoric correlations were:

Boys: 0·2615 ± ·0436, *Girls:* 0·2119 ± ·0347;

in both cases appreciable, but far less than one might have anticipated. We should naturally have supposed that cleanliness of body and tidiness of hair would be products of maternal environment and so highly correlated. It is singular that they are not. There may be mothers who consider chiefly externals, and so press for tidiness of hair, but it is hard to imagine that those who emphasise cleanliness of body overlook cleanliness of hair.

It will be seen that the girls differ a good deal from the boys. The boys have more cleanliness of hair and fewer nits and vermin than the girls—probably largely accounted for by shortness of hair, but the boys are considerably less clean in their bodies than the girls. These sexual differences have been noted among Gentile children but hardly to the extent here recorded of these Jewish boys and girls.

Unfortunately, we have only comparative material for personal cleanliness of Gentile children as judged by body and hair combined. To make the comparison accordingly we have to turn back to Table LII and take as Class 1 those who are clean in both body and hair. In Class 2 those who are untidy in hair or have dirt patches etc. on body or both. In Class 3 those who are dirty, untidy or with nits in hair, or very dirty and fleabitten on body or both. Finally, Class 4 contains those verminous in either hair or body or both. We thus reach the following comparative table:

Table LIV. *Cleanliness of Body and Hair in Alien Jewish and Native Gentile Children.*

	Boys				*Girls*			
	Clean %	Untidy %	Very dirty, nits, fleabites %	Verminous %	Clean %	Untidy %	Very dirty, nits, fleabites %	Verminous %
Gentiles, Good Districts	87	10	3	0	94	4	1	1
,, All Districts	69	20	9	2	64	13	21	2
,, Poor Districts	17	50	26	7	52	28	18	2
Alien Jews	5·5	59·1	30·4	5·0	4·6	35·9	53·1	6·4

It does not seem to us that there can be any doubt as to the inference to be drawn from these results, especially when we remember that personal cleanliness of the children is largely a measure of parental standard in these matters. *The standard of the Jewish aliens in the matter of personal cleanliness is substantially below that of even the poor Gentile children.* The full gravity of this result

will only be realised when we remember how vitally important it would be, if London were struck by a great epidemic. We know that some of the most serious epidemic diseases are borne by parasites, and that uncleanliness renders these possible. The recent danger of the invasion of Western Europe by epidemics from the East was largely owing to the condition of the Polish and Russian populations on its eastern borders, and one factor of that condition—as grave as impaired physique—was uncleanliness*.

The matter is so important and has such an essential bearing on the immigration problem that we give here independent results which have been published by the School Medical Officer for Leeds in his 1919 Report. We were unaware of the existence of this independent inquiry, and our attention was only drawn to it accidentally by Dr C. S. Myers†.

Table LV. *Cleanliness of Alien Jewish and Native Gentile Children in Leeds.*

Percentage of Cases in which Cleanliness was defective.

	In the Case of Head	In the Case of Body
Gentiles, Better Class Schools	3·4 %	0·1 %
,, Suburban Schools	6·4	1·2
,, Ordinary Schools	7·2	1·2
,, Poor Schools	8·7	3·2
Jews, Jewish Schools	15·8	1·9

Thus the Jewish children are much worse than the Gentile children in cleanliness of head, but while below the average schools in cleanliness of body are better than the children of the poor schools in Leeds, but worse than the average schools.

(*b*) *Condition of Clothes.* This may be considered from at least three standpoints: (i) adequacy, (ii) soundness, and (iii) cleanliness. We concern ourselves with the latter two standpoints. To mark how far the matter is due to poverty, and how far to lack of home supervision, we have inserted a census for a veritable "ragged school," a school run by a religious body for waifs and strays.

Our categories were as follows:

Soundness.	*Clothing.*	Cleanliness.
(i) Outer and under clothing excellent.		(i) Outer and under clothing clean.
(ii) Outer excellent, under a little worn, torn or patched, and *vice versa.*		(ii) Outer clean, under a little dirty, and *vice versa.*
(iii) Outer excellent, under considerably torn, worn or patched, and *vice versa*, or outer and under somewhat torn.		(iii) Outer and under both a little dirty; outer clean, under dirty; outer dirty, under clean.
(iv) Outer a little torn, etc., under considerably torn, etc., and *vice versa.*		(iv) Outer dirty, under a little dirty, or outer a little dirty and under dirty.
(v) Outer and under both considerably torn, etc.; outer a little torn, etc., under ragged, and *vice versa.*		(v) Outer dirty and under dirty; outer a little dirty and under filthy; outer filthy and under a little dirty.
(vi) Outer considerably torn, etc., under ragged, and *vice versa*; both ragged.		(vi) Outer dirty and under filthy or *vice versa*; both filthy.

* In a lecture which the senior author gave to an audience of English Jews, he referred to this characteristic of the alien Jews and much feeling was exhibited in the discussion after the lecture on this point; it was more than suggested that our data were biased, although they had been collected by the ordinary school medical examination method, one of the two doctors being a Jew. Only one of the Jewish members of the audience with a wide experience of educational matters had the courage to face the storm and say that the statistics represented a real fact, and that it was a fact which ought to be remedied. The remainder protested long and warmly, as if the lecturer had made a charge against *all* Jews, whereas he had been careful to distinguish between Russo-Polish Jews and Jews long established in Western Europe. No statistical data qualifying the above table were cited, but much reference was made to individual Jewish children whom the speakers had known personally to be clean.

† At the lecture referred to in the previous note he was in the chair and cited from the *Report* the favourable data as to stature and weight as confirming our results. On obtaining the *Report* from Leeds we also found that it confirmed our other results as to personal cleanliness.

Treating *soundness* first we have the percentages:

Table LVI. *Soundness of Clothing of Alien Jewish Children.*

	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Boys	3·4	11·3	35·9	31·4	16·4	1·6
Girls	12·4	14·1	38·5	21·5	13·1	0·4

As usual the clothing of the girls is in better order than that of the boys. But the classes are somewhat too numerous. We have accordingly classed together (i) + (ii) as "well-clad"; we take (iii) as "Passable"; (iv) Torn and Inadequate; (v) + (vi) as "Ragged." We then reach the following comparative table:

Table LVII. *Percentages of Clothing (Soundness) Categories, Alien Jewish and Native Gentile Children.*

	Boys				*Girls*			
	Well clad	Passable	Torn and Inadequate	Ragged	Well clad	Passable	Torn and Inadequate	Ragged
Gentile, Good Districts	60 %	26 %	11 %	3 %	84 %	11 %	5 %	0 %
„ Average	27	30	28	15	54	28	13	5
„ Poor Districts	18	38	26	18	42	26	18	14
„ "Ragged School"	1	20	51	28	—	—	—	—
Alien Jews	15	36	31	18	26	38	22	14

It is clear that the alien Jewish children are far below the average of the Gentile children*, being indeed below the Gentiles of the poorer districts. They are only in excess of the "Ragged School," although well in excess of this. There seems some ground for the statement frequently made that they undersell natives in the labour market because they have a lower standard of life.

We now turn to the cleanliness of the clothing and find the following results:

Table LVIII. *Cleanliness of Clothing of Alien Jewish Children.*

	(i)	(ii)	(iii)	(iv)	(v) + (vi)
Boys	0·7	8·6	46·8	26·0	18·0
Girls	7·6	16·9	33·7	22·3	19·5

We note that while in both sexes the cleanliness of the clothes leaves much to be desired, the girls are slightly better than the boys, who have a marked deficit of (i) + (ii). Both have a startling excess of (v) + (vi), i.e. of outer and under clothing both dirty or one or other filthy. We must now turn to the question of comparative statistics.

Unfortunately we have no comparative data from the London County Council area. Within this area the condition of the clothing has either been combined with its cleanliness, or the cleanliness of the clothing has been combined with the cleanliness of the body. It is very desirable to investigate separately, as was done on the present occasion, soundness of clothing, cleanliness of clothing and cleanliness of body, and when possible to distinguish between outer clothing and underwear.

* The following returns are for Edmonton Urban District—a poor industrial area:

	Well clad	Passable	Torn and Inadequate	Ragged
Boys	17·4	41·1	35·4	6·1
Girls	24·6	52·7	19·1	3·6

Of course the personal equation enters into the question of dirt; it is hard, however, to believe that any observer would not have classified our three Groups (iv), (v) and (vi) as "Dirty," but to avoid any possible error of personal equation we will consider only Groups (v) and (vi) to represent "Dirty" clothing. There is a further point to be made here: the clothing of the children was recorded at the regular medical examination, so that the parents knew the children were being inspected. It was not done by "surprise" visits. In Gentile schools it has been found that the percentage of dirty clothing is doubled, if the record is made at a surprise visit. We have then to infer either that the parents of these alien Jews made no attempt to tidy them up for inspection, or if they did, then the percentages recorded are minimum values, and might on normal occasions be doubled. What we require for inspection of clothes (and body) is the every-day record and not the record when the children have been tidied up for inspection.

The following table gives comparative data:

Table LVIII *bis.* *Percentage of "Dirty" Clothing in Alien Jewish and Native Gentile Children.*

District	Nature of District, etc.	No.	*Boys*	No.	*Girls*
London	Alien Jews	911	18·0 %	1015	19·5 %
Glasgow	Schools for Mentally Defective	303	18·2	197	13·2
,,	Voluntary Schools	1815	5·2	1837	6·3
,,	Board Schools	9754	3·7	9500	3·8
Derbyshire	Industrial District (Mining)	6634	3·7 } (Girls and Boys)		
,,	,, ,, ("Surprise" Visit)	857	6·1 }		
Croydon	Urban District with considerable working-class population	1989	1·7	1770	1·0
Grays, Essex	Population largely dependent on Cement Works and Dock Labour	478	5·4	436	3·2
South West Essex	Clerks and Artizans and Workers in Government Powder Factory	1725	3·3	1660	1·8
Central Essex	Good Residential and Agricultural District (Few Works)	2109	1·9	2087	1·1

The only schools where dirty clothing is—for the boys at any rate—as extensive as among the alien Jews is in the schools for mentally defective children in Glasgow*. The average Board School in Glasgow has not a quarter of the Jewish percentages, and the same applies to a poor industrial district like Grays in Essex. We are forced to the conclusion that in cleanliness of clothing the alien Jewish children fall far short of the native Gentile population.

General Conclusions from Sections (iv) *and* (v). It would seem to flow from the last two sections of this paper that the Jewish alien children are not superior to the native Gentile. Indeed, taken all round we should not be exaggerating if we asserted that they were inferior in the great bulk

* We can by a slightly different classification compare the alien Jewish children with the Edinburgh slum children as investigated by the Charity Organisation Society.

Table LVIII *ter.* *London Alien Jews and Edinburgh Slum Children.*

Cleanliness of Clothing.

	Boys			*Girls*		
Our Scale	(i) + (ii)	(iii)	(iv) + (v) + (vi)	(i) + (ii)	(iii)	(iv) + (v) + (vi)
C.O.S.'s Scale	Very Good and Good	Medium	Bad and Very Bad	Very Good and Good	Medium	Bad and Very Bad
Alien Jews	9·3	46·8	44·0	24·5	33·7	41·8
Edinburgh Gentiles	30·7	49·5	19·8	29·1	39·9	31·0

The number of children dealt with in Edinburgh was 703 for boys and 616 for girls. It is, we think, clear that our Class (iv) must be included in the Edinburgh "Bad," as it is impossible to place "dirty" clothes under "medium" cleanliness.

of the categories dealt with. But to stress this fact is not essential, if we start from the principle that: *The admission of aliens to a crowded country is only advisable when those aliens in physique or mentality are the superiors of the autochthonous race.* This has so far not been demonstrable in the case of the Polish and Russian Jews. But while the characteristics we have dealt with are very essential, there remains a distinct possibility that our unfavourable judgment might be largely reversed if we should find that these alien Jews are markedly superior in intelligence to the native Gentiles. We might pardon a poor physique and even uncleanliness if these characteristics were accompanied by a dominating intelligence. The investigation of this intelligence category forms the topic of Part II of this paper.

APPENDIX I.

CONTENTS.

A

*Child's Name:*_____

*Address:*_____

*Schedule No.*_____

*No.*_____

*Date:*_____

SCHEDULE FOR OBSERVATIONS ON SCHOOL CHILDREN.

HOME SECTION. WHITE, BOYS. BLUE, GIRLS.

(1) Schedules of Brothers of this Child: Nos._____

(2) Schedules of Sisters of this Child: Nos._____

(3) Birthplace: School:

(4) Present Age: (5) Age when first at School:

Family. Parents: (6) Date of Marriage:

	Nationality	Birthplace	Present Age	Year of Death	English	
					Speaks	Reads
Father	(7)	(8)	(9)	(10)	(*a*)	(*b*)
Mother	(11)	(12)	(13)	(14)	(*c*)	(*d*)
	General Health	Special Ailments	Sight	Hearing		
Father	(15)	(17)	(19)	(21)		
Mother	(16)	(18)	(20)	(22)		

Note under Special Ailments of parents: insanity, tuberculosis, alcoholism, etc.

Family: Children (23) No. born:_____ (24) No. alive:_____

(25) Order	Living	Dead	Sex	Age	Remarks	Order	Living	Dead	Sex	Age	Remarks
1						6					
2						7					
3						8					
4						9					
5						10					

State age at present or at death. Under "Remarks" record whether any special ailment (rickets, tuberculosis, bone disease, etc.) or physical or mental defect (albinism, deaf-mutism, imbecility, etc.).

(26) Occupation of Father:_____ (27) Occupation of Mother:_____
(28) Income: Total:_____ (29) per "adult":_____
(30) Details, how earned:_____
(31) Rent:_____ (32) per "adult":_____ (33) Wife receives:_____
(34) No. of Rooms:_____ (34) *bis* per "adult":_____ (35) Lodgers:_____
(36) Children at Home:_____
(37) Sitting Rooms or Kitchen:_____ (38) Slept in:_____ (39) Bedrooms:_____
(40) Size:_____
(41) Cleanliness:_____ (42) Lighting:_____
(43) Ventilation:_____
(44) Food:_____ (45) No. of Meals for Children:_____ (46) School Dinners:_____
(47) Sleep: Hours:_____ (48) Bedtime:_____ (49) Charitable Help:_____
(50) Clothes: Neckwear:_____ (51) Headgear:_____ (52) Boots:_____
Home Life of Children: (53) How far from School:_____
(54) How kept in order:_____ (55) Punishments:_____

	1	2	3	4	5	6	7	8	9	10
(56) Domestic Work:										
(57) Outside Work:										
(58) Indoor Work for Employers:										

Leisure	(59) Reading	(60)	(61) Hobbies	(62)	(63) Games	(64)	(65) Outdoors	(66)
Child	What?	Hours?	What?	Hours?	What?	Hours?	What?	Hours?
1								
2								
3								
4								
5								
6								
7								
8								

Fill up for Children not yet at, and for those past school, as far as possible.

(67) Hebrew: what age begun:_____ (68) No. of hours per week:_____
(69) Synagogue:_____ (70) Prayers at home:_____
(71) German:_____ (72) Reading: No. of hours per week:_____

Remarks:

B

*Child's Name:*_____

*Address:*_____

*Schedule No.*_____

*No.*_____

SCHEDULE FOR OBSERVATIONS ON SCHOOL CHILDREN.

SCHOOL SECTION. WHITE, BOYS. BLUE, GIRLS.

(1) Schedules of Brothers of this Child: Nos._____ (2) Schedules of Sisters of this Child: Nos._____

*Date:*_____

TEACHER'S INFORMATION.

(73) Standard:_____ Division of Standard (if any)_____

(74) Child's Place in Division of Standard_____ No. of Children in Division_____

(75) Sex:_____ (76) Age at present to months:_____

(77) Date when first at any school:_____

Hours per week at close work, namely:

(78) Hours required for home lessons:_____ (79) Reading:_____ (80) Sewing:_____ (81) Writing:_____ (82) Drawing:_____

(83) General Intelligence (see Definitions):

Very Able	Capable	Intelligent	Slow Intelligent
Dull	**Very Dull**	**Mentally Defective**	

(84) Extent of Punishment: Frequent:_____ Occasional:_____ Rare:_____

(85) Conscientiousness: Keen:_____ Medium:_____ Dull:_____

(86) Weight:_____ (87) Height:_____ (88) _____ _____

[Not used: see C.]

MEDICAL FACTS FROM LAST REPORT: (Please use *three* well defined classes).

(89) Nutrition:				(93) Teeth	(i) Cleanliness:			
(90) Glands:				(94)	(ii) Decay:			
(91) Cleanliness:				(95) Tubercular Signs:				
(92) Anaemia:				(96) Hearing:				

(97) Physical Defects:_____

Observer's Data.

(98) Hair Colour: Scale_____ (99) Eye Colour: Scale_____ (100) Lens:_____

Head measurements: (101) *L*:_____ (102) *B*:_____ (103) *H*:_____ (104) I_1:_____ (105) I_2:_____

(106) Aur. Pass. to Nasion:_____ (107) Aur. Pass. to S. Ridge:_____

(108) Interpupillary Distance:_____ (109) Aur. Pass. to Cornea:_____

Corneal Curvatures						Acuity		
R			*L*			*R+L*	*R*	*L*
(110) C_1	(111) C_2	(112) *Ax*	(113) C_1	(114) C_2	(115) *Ax*	(118)	(119)	(120)
						Refraction:	(121)	(122)
							(123)	(124)
Near Point		(116) *R* _____		(117) *L* _____			(125)	(126)
(127) Fundus:			Remarks:					

Schedule for Correlations: No.						(1)			(2)	
3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35
36	37	38	39	40	41	42	43	44	45	46
47	48	49	50	51	52	53	54	55	56	57
58	59	60	61	62	63	64	65	66	67	68
69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101
102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123
124	125	126	127	128	129	130	*a*	*b*	*c*	*d*

C LONDON COUNTY COUNCIL.

NAME_____ SCHOOL_____

ADDRESS_____ DATE OF BIRTH_____

3000—11-6-10 [T.C. 1242

Has the child suffered from		Measles	Diphtheria	Scarlatina	Rheumatism	Chorea
Date of Examination						
Standard						
Age at Examination in Years and Months						
Without Shoes	Heights in Cm.					
	Weights in Kilos and tenths					
External Eye Disease						
Binocular Vision						
Chest Examination	Heart					
	Lungs					
Remarks						

Cleanliness	Hair	
	Body	
Clothing	Sufficiency	
Boots	Condition	
	Whether supplied at School	
Nutrition	General	
	Pectoral reaction	
Colour	Facial aspect	
	Haemoglobin percentage	
Throat	Cervical Glands	
	Tonsils	
Breathing		
Ears		
Tuberculosis	Quiescent	
	Active	
Initials of Examiner		

Teeth